

MOTOR TREND

APRIL 1959 35c

Beginning this issue
**GET MORE POWER
FROM YOUR ENGINE!**

Is this the
**ALL-NEW
Volkswagen?**

page 36

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DETROIT MICH

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**PONTIAC - CAR
OF THE YEAR!**

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TRIUMPH hauls more than any other station wagon in its class

TRIUMPH Estate Wagon carries big load ...with savings to match

British car costs \$1500 less to buy ...\$350 a year less to operate than average station wagon...and it's the "best engineered" of all economy cars

"When I saw the Estate Wagon, I knew I had the car I was looking for," says a new TRIUMPH owner. He writes:

"It's more than spacious enough to do all the hauling our 2-door sedan couldn't handle. And what we saved on purchase price and operating costs is paying off our home improvement loan."

The TRIUMPH Estate Wagon is made by Standard-Triumph of Coventry, England—the same people who make the TRIUMPH TR-3 sports car. Since the company's first cars appeared in 1903, they've gained a world-wide reputation for fine engineering. And fine British engineering is very good indeed.

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Over 70 m.p.h.—60,000 miles without major overhaul

It can cruise all day at 65—with no strain on the ultra-quiet engine. The car will go up to 60,000 miles without a major overhaul — and 100,000 isn't unusual. You get up to 40 miles per gallon. And the body — built as a unit with the chassis — takes the roughest treatment with nary a rattle.

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The TRIUMPH is 3 feet shorter than a typical American station wagon. But there's no wasteful over-

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There are now TRIUMPH dealers in every state—over 700 in all—each with service and parts. There is probably one located near you. He'll drive the car right to your door for a demonstration. Drop us a line at the address below, and we'll make the arrangements.

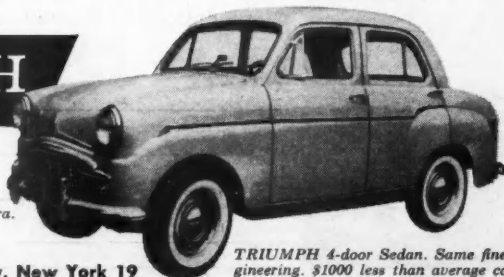
Be sure to guest-drive TRIUMPH soon. You see, we can't describe the best part of all—the pleasure a TRIUMPH brings back to driving. That you'll have to experience for yourself.



TRIUMPH

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Sedan \$1699*

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APRIL, 1959

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NEXT MONTH

Complete report on Daytona's Speedweek. How each and every stock car fared in acceleration, top speed, handling, brakes, economy . . . Road tests of several unusual cars . . . Story on a car with which the builder hopes to break 400 mph . . . Many product use tests . . .

MOTOR TREND

MOTOR TREND



THE COVER:

Winning new acclaim as MOTOR TREND's "Car of the Year," the Pontiac shows off its improved handling characteristics. The wider tread takes it easily through a tricky turn at Riverside International Raceway. Ektachrome photo is by Bob D'Olive.

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SAM HANKS, 1957 Indianapolis Winner, says:

"I'd like a **NATIONAL SCHOOLS** trained mechanic on my crew...any employer would!"

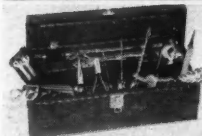
Sam Hanks holds American Closed Course record (182.5 M.P.H.); also many state and national racing titles.



MASTER ALL ENGINES
AT HOME IN YOUR SPARE TIME
NATIONAL SCHOOLS
AUTO MECHANICS & DIESEL COURSE
INCLUDING FUEL INJECTION

"I've worked alongside National Schools-trained mechanics," reports Sam Hanks. "They're tops, because they get all-around training, and they know how to repair fast and right the first time. No wonder National Schools graduates command top pay."

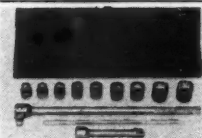
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PREPARES YOU FOR: auto mechanic jobs, airplane mechanics, farm machinery repair, all diesel jobs, experimental labs, government work, engine specialists and all-around mechanic.

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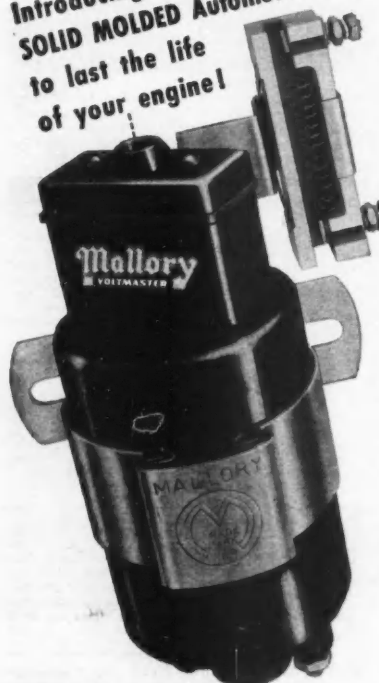
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MEMO FROM THE EDITOR



THE TWO SMILING FACES above belong to Semon Knudsen (right), Vice President and General Manager of Pontiac Motor Division, and your editor. The occasion was the presentation of the annual **MOTOR TREND** Award to Pontiac for the year's best combination of handling, ride and performance—all due to the wider track. You'll find the complete story on page 18.



WHEN SOME PEOPLE HAVE A HATE for things, they often let this hate blind logical reasoning. Take the case of a daily newspaper, noted for its campaign against auto racing—except when it works to its own benefit.

After the unfortunate death of '58 World Champion Driver Mike Hawthorn on a road outside of London, the paper had this to say:

"The ironic death of the 29-year-old Englishman came three months after he won the world auto driving crown and only a month after he retired from the most dangerous of all sports . . ."

Then, apparently to prove their point that racing is ". . . the most dangerous of all sports," they listed the deaths of other drivers who had lost their lives on *race courses* during the past two years—though Hawthorn lost his life on a *public road* while driving too fast.

Elsewhere in the same paper they quoted Juan Manuel Fangio as saying [about Hawthorn's death]: ". . . I've always said it is more dangerous to drive on the highway than to compete on the race track where we take every safety precaution . . ."



THOUGH SMOG IS USUALLY thought of as a problem peculiar to Los Angeles, the West Coast city ranks fifth in the list of American cities plagued by this eye-and-nose irritant. Others, according to the United States Public Health Service, include Chicago, Philadelphia, Detroit, St. Louis, Buffalo and El Paso.

For years there has been a question as to how much smog is caused by incinerators, the oil industry and cars. No-one has ever been able to prove the percentages they have blamed on each; to a large extent it depends on what industry you're in. It is known, however, that regardless of the other steps that Los Angeles has taken to alleviate the problem, smog in that city still exists. It would therefore seem logical to assume that cars are definitely a contributing factor.

Realizing this, the automobile industry is devoting \$1 million yearly to development of an anti-smog device. The first real steps in this direction were announced a few weeks ago and consist of anti-smog "mufflers" (see description of two, page 86). In reference to these devices, and others in various stages of design, Dr. W. L. Faith, managing director of the independent Air Pollution Foundation, has said that they are only the forerunners of ". . . the ultimate economic control device."

According to Dr. Faith, the problem is not solved because there are a couple of afterburners near the market stage. Much more engineering refinement is needed. One of the most important roadblocks in the way of an adequate control device, Dr. Faith has said, is for smog research to identify the eye irritant, and to know more about the mechanism of ozone and aerosol.

To which we add, "And less use of smog as a political football."

Pat Brown

What kind of a car do you want, exactly? Chevrolet has a choice of nine engines, five transmissions, two suspension systems, regular or Positraction rear axles, special cams, solid or hydraulic valve lifters, two air conditioning systems, even Fuel Injection—the list of extra-cost options is astonishing. But what it means is that you can virtually design your own car, tailored precisely to your needs. Here's one case in point:

“I ‘built’ our Chevy as a packhorse”



“My wife always puts down ‘profession: housewife’ on the income tax forms—but she’d be a lot more accurate if she made it ‘bus driver.’ We’ve got a Little Leaguer, a Boy Scout and a daughter in ballet classes, plus a fanatic interest in gardening, and it seems to me she spends 90 per cent of her time transporting kids or plants somewhere and back.

“So when it came new car time for us I took Chevy’s whopping list of options and sat down to ‘build’ a car that would make her job easier. The nine-passenger wagon, of course, because we *have* to have the space—and the kids love that rear-facing

third seat. The electric rear window is standard on this model and it’s a real boon on hot summer days.

“The budget pointed to that penny-saving Six engine, but Powerglide and power steering were almost necessities—all her driving is stop-and-go neighborhood stuff and I’d swear she never travels five blocks without parking.

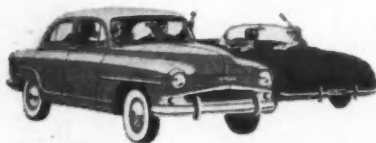
“But I made myself a real hero with something she’d never have

thought of—Positraction. She still doesn’t know *how* it works but to hear her talk you’d think I’d invented the wheel—she cruises right through a foot of snow or the spring mud on that dirt road out to Wolcott’s Nursery without a whisper of wheelspin. But I guess I did almost too good a job; that car is *hers*, and I practically have to pry her fingers off the wheel to borrow it!”

It’s a fact; you can make a car *yours* all the way through with Chevy’s terrific spread of options—sit down with the specs and see what you come up with! . . . Chevrolet Division of General Motors, Detroit 2, Michigan.



Is it OK to wave at a Simca?



Definitely not a question for a boy! At first look-over, a SIMCA seems a wee bit too dang-fancy to merit a waving reception. What with those reclining seats, ash trays, and four doors. But then, Sports Cars Illustrated *did* say that SIMCA "will outperform anything else in its price class." And Mechanix Illustrated *did* pick SIMCA as your "Best Import Buy." And SIMCA *does* hold 14 world's performance records, including the all-time endurance crown.

SIMCA has a 4 speed transmission, with the 3 top gears synchromesh. Throws are short, quick, and positive. Standard equipment on all Super DeLuxe and sports models includes heater, defroster, reclining seats, 12-volt ignition, and UniGard body. Instrumentation includes trip odometer, speedometer, conventional fuel gauge, low fuel flasher, and oil pressure and amp lights. SIMCA is now distributed by Chrysler Corporation, which puts their giant parts and service network on the job.

Go see one. Drive it. Drag it. Speed-shift it. Try to make the brakes-fade. Then you'll see what everybody's talking about...and waving at.

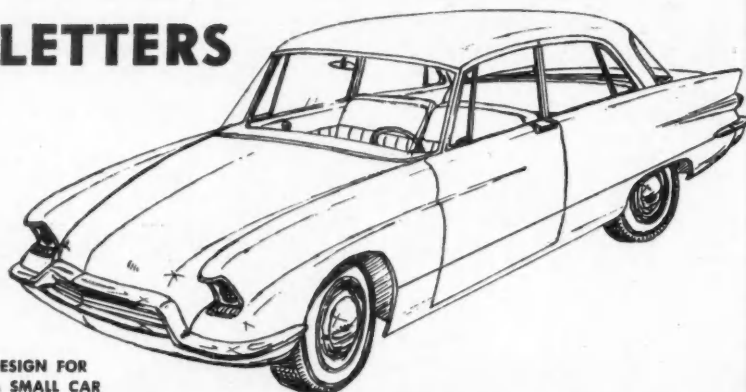


SIMCA

Imported from Paris by Chrysler

SIMCA SALES OFFICE
CHRYSLER MOTORS CORPORATION
DETROIT 31, MICHIGAN

LETTERS



DESIGN FOR
A SMALL CAR

Dear Sir:

I have found an interesting challenge in trying to combine roominess with good looks in a small car.

Enclosed is a sketch (above) of one of the

approaches that I think is most feasible. I started by using the interior dimensions of the Rambler American as minimum requirements.

Michael J. Heuer Toronto, Ont., Canada

SENSIBLE TWO

Gentlemen:

I was very pleased with your recent tests of the Rambler American and Studebaker Lark. They show the classification in which these two automobiles belong—the sensible car class.

I'll admit that these cars will never win any beauty prizes, but their styling is not too boxy or gaudy. The stylists and engineers proved that it is possible to work within limitations. These cars have adequate power and they show what a true automobile should be like.

I implore you to call the top auto makers the "Big Three" and "Sensible Two." David Schmidt Tipton, Mo.

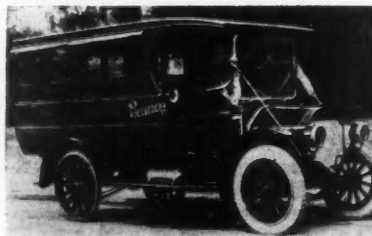
YES—A WILLYS BELVEDERE

Dear Editor:

An item in the January "Rumor Mill," regarding former model names of Willys, interested me very much. The answer stated that Willys once had a model called the Belvedere.

I could be wrong, but I do not remember anything in the Willys line being called a Belvedere. Could it be possible you are thinking of a beautiful hardtop produced in 1955 which was called the Bermuda?

W. Diffendall Millersville, Pa.
Willys-Overland did produce a Belvedere model in 1913, which makes it one of the



earliest station wagons. Not too many were built, so perhaps the model designation made little impression on anyone.—Ed.

BIG THREE—KEEP OUT!

Dear Mr. Woron:

I don't know why the "Big Three" have to stick their noses in and start producing small cars. Why don't they leave that field to the two companies that really pioneered the big change in U.S. cars—American Motors and Studebaker-Packard?

We cannot give full credit to AMC and S-P, though, without remembering two other manufacturers — Kaiser-Fraser, with their Henry J, and Crosley—who thought of small cars even before they became popular in the United States.

Roger Williams

Charleroi, Pa.

LILLIPUTIAN CUSTOMS

Gentlemen:

"Custommodernizing in Miniature" in the February issue caught my eye. I'm 15 years old and have been customizing scale models for more than two years.

Here is a photo of a '58 Roadmaster convertible with '57 DeSoto grille, Lake plugs,



'54 Olds Holiday trim and scallops. The center chrome strip has been removed from the hood, and the model has a tan and white two-tone finish. In the background are a '58 Bonneville and Impala.

Larry Kitzel

Fairbury, Neb.

Dear Sirs:

One of your most interesting features in the February MOTOR TREND was "Custommodernizing in Miniature."

I am sure there must be a few more miniature customizing fans in the country, so why not give us a treat more often?

Eric Ash

Belleville, Ont., Can.

ARE THEY ANY GOOD?

Gentlemen:

Can you give me your opinion of the spark plugs mentioned in the enclosed advertisement? Has your magazine made any tests or investigations of this product?

Bill Reese

Paul, Ida.

We've had countless requests of this kind since inauguration of our Seal of Approval program. The spark plugs referred to are the so-called "fuel igniters," which come under several different names, but are all manufactured by the same company. The set we tested and reported on in Oct. '58 were anything but satisfactory.—Ed.

LOWER, HEAVIER—BUT NOT WIDER

Editors:

In your report on the '59 Ford, you refer

to it as being "lower, wider and heavier" than the '58. On two counts you are correct—it is slightly lower and also heavier. But the maximum width of the '59 Ford has been reduced from 78 to 76.6 inches.

Let's give credit where credit is due and give the fellows at Dearborn a pat on the back for making a sensible move, even if only in one direction. Now, if we keep our fingers crossed, maybe they'll even stop making them longer and lower.

Phil Robbins

Greensboro, N.C.

JAGUAR BRAKES

Dear Sir:

In your article "Driving the Jaguar XK-150S" you said the car had 12-inch brake drums, with two leading shoes in front. Am I to assume the latest model now has drums on the front and discs on the rear?

Madison P. McClintic Richmond, Va.
We goofed. The Jaguar XK-150S has disc brakes all around—Ed.

PEERLESS DISTRIBUTOR

Gentlemen:

A few months ago your publication showed a picture of a new British car called the Peerless, which was using a Triumph TR-3 engine in a four-passenger tourer body. Could you advise me who is importing the car?

Paul W. Hiller San Pedro, Calif.
There is a strong possibility that by the time this appears in print, Cal-Sales Inc., Gardena, Calif., will be distributing the Peerless.—Ed.

SEAL OF APPROVAL

Dear Sirs:

I was one of those fooled by the good promises of the Waterless Battery Co. and was glad to learn of the exposure of the practices of their company.

I believe you are performing a valuable public service in testing advertised products.
Richard C. Wilson Richfield, Utah

Dear Sir:

You are certainly to be congratulated upon inaugurating your "Seal of Approval."

Most interesting to me are the tests and reports on gadgets that are supposed to give greater gas economy. Many motorists, I am sure, wish that someone will soon develop an honest and workable device for helping to improve gasoline mileage.

Alan E. Sievers Amsterdam, N.Y.

Gentlemen:

I'm especially glad to see this new MT Seal of Approval on products tested. Gadgets that don't live up to claims by word-happy manufacturers and advertisers have always been a sore spot to most auto owners.

Thanks to MT, good factual information is now available.

Paul Peavey Garland, Tex.

Dear Sir:

The article, "Avoid Battery Frauds," was very enlightening and of special interest, as I sold those "10-year" batteries to local people. Since the distributor went out of business, I have had to take the barrage of complaints. The distributor and I were left in an embarrassing situation.

Steve P. Konkovich Granite City, Ill.

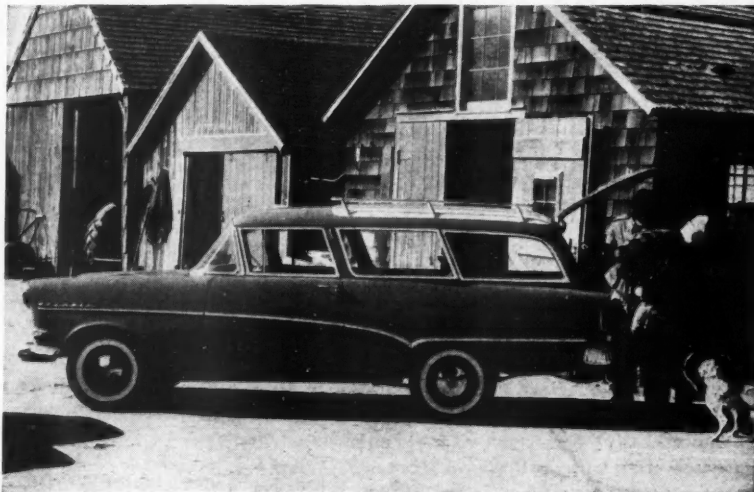
Gentlemen:

About time we owners of older cars had some place to find such approved products.

Thank you!
W. G. Taylor Stratford, Conn.

GERMAN MADE

Popular and precision built Opel Caravan gives you station wagon usefulness without bulk. Peppy performance with economy. Built with American big-car ideas.



AMERICAN STYLE

It has room aplenty for a family of five . . . and vacation gear, too. Or fold down the wide rear seat and get nearly 6 feet of flat cargo space for a ½-ton load!



THIS IS OPEL

Up to 30 miles per gallon. 56 horsepower, oversquare 4-cylinder engine. 174 in. long, 5'3" wide. Standard 3-speed shift. Opel Caravan station wagon, MANUFACTURER'S SUGGESTED RETAIL PRICE \$2292.60 P.O.E. New York.* Also available: Opel Rekord 2-door sedan.

THE BIG SMALL CAR BUILT IN GERMANY BY GENERAL MOTORS • SOLD AND SERVICED BY BUICK DEALERS

* (Including heater, defroster, turn indicators, delivery, handling, Fed. excise taxes.) Transportation charges, state, local taxes, accessories and opt. equipment inc. whitewall tires additional.

ONE OF THE WORLD'S GREAT ROAD CARS IS INVITING YOU TO COME FOR A TRIAL RUN

It's the only production car of its type in the entire low-price field—the Plymouth Sport Fury '59.

Foreign engineers have marveled at its Torsion-Aire suspension system: a remarkable teaming of torsion bars up front with asymmetrical leaf springs to the rear. It has run with some of the best of the European sports cars on mountain roads in Italy. Tested against a famed Gran Turismo car (priced above \$7000) on our own western mountains, FURY performance caused a famed automotive magazine editor to write that *he'd take the Plymouth!*

Yet Plymouth serves beautifully as a family car as well. That's because it's built with true American functionalism

in mind. Most fellows don't own two cars. They need roomy luxury for family travel and ample luggage space for long runs over American distances.

But they still want hustle. That's what Plymouth is built for. Its cornering is incredibly flat and sure-footed. It digs out without squat and stops short without nose-dive. It is unmatched in the field for sheer road performance, as a trial run will swiftly show you, *today*. Come along!

POWER FOR YOUR PLYMOUTH? You pick that from Plymouth options. For genuine tops in go, try the New Golden Commando 395, biggest V-8 engine in its field.

Today's best buy . . . tomorrow's best trade

Plymouth



THE RUMOR MILL



"The air slots in Chevis are to get the public used to this odd shape as a headlight."

POSSIBLE—Though we have no indication that Chevrolet designed their 1959 car with this in mind, we do know that auto manufacturers are working on new and unusual approaches to the headlighting problem. Horizontal lights could be one of them.

"Horsepower will be reduced in 1960 to meet public demand for greater economy."

FALSE—Horsepower, like speed, is relative. From a performance standpoint the ratio of horsepower per pound of vehicle weight is the deciding factor. A low-horsepower engine that has to be operated at full-throttle to provide a desired performance would be less economical than an engine that could do the same job at part throttle.

"Pastel shade sidewall tires to match or harmonize with the color scheme of the car will come back in vogue in 1960."

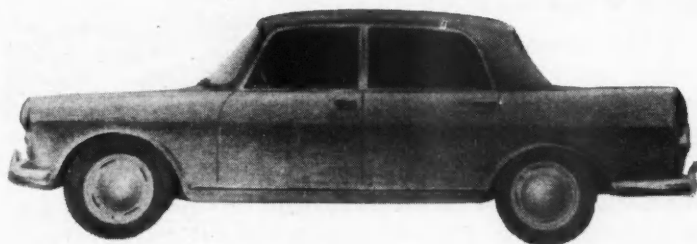
FALSE—The idea of matching sidewalls was tried in the late '30s. It was revived after World War II, when money was loose. One company took a swing at it about a year ago but the public did not cotton to the idea. Accent on wheels as good esthetic design is considered important, which is why stylists have moved more and more away from fender skirts and toward larger wheel openings. Whitewalls provide a better contrast, even on light colored cars.

"General Motors is planning to market a diesel-powered car through one of its divisions in the near future."

NOT LIKELY—Detroit Diesel Engine Division's recently extended line includes a four-cylinder and V6 engine, which could be used in cabs or cars. It's not likely, however, that GM will use either in a passenger car because of costs.

"All-aluminum brakes will make their appearance in 1960."

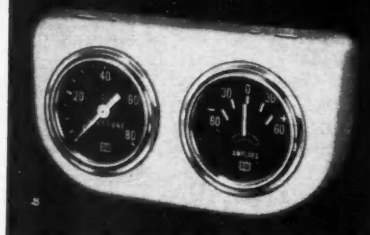
FALSE—If the rumor means aluminum without cast iron liners. Aluminum drums with liners and lined aluminum drums with integral hubs are now available. Sprayed-on-steel liners have been tried but add cost and are too hard to provide with a co-efficient of friction comparable to gray iron liners.



"Peugeot will join other European makers in adopting Italian styling in a new model."

PROBABLE—If so, it will be a smaller brother to the 403. Its 1100cc engine—reduced from the 203's—will develop 45 hp, deliver 75 mph. Farina styling (see illustration above) features panoramic windshield, oval grille and sloping hood, with engine inclined slightly to the right.

STEWART-WARNER DELUXE TWIN GAUGE PANEL



A "MUST" FOR ENGINE SAFETY

... ON CARS WITH JUST PANEL WARNING LIGHTS!

If your car is equipped with just battery and oil warning lights, you need an ammeter and oil pressure gauge for complete operating safety. For finest gauge performance and dependability, install the new Stewart-Warner Deluxe Panel and Gauges!

Stewart-Warner Ammeter—tells actual rate of current flow, helps prevent burning out a generator... overcharging or discharging of battery.

Stewart-Warner Oil Pressure Gauge—tells exact oil pressure in pounds, at any engine speed.

Stewart-Warner Deluxe Panel—Luxurious off-white "Colonial" grain color harmonizes with any interior. Bracket, light wire and socket included. Accommodates two Stewart-Warner Gauges of your choice in economy, heavy-duty mechanical or electric types.



STEWART-WARNER MOTOR MINDER

Pays for itself in gasoline savings. Helps avoid costly repairs by giving constant check on condition of spark plugs, carburetor, rings, valves, timing, etc.

STEWART-WARNER ELECTRIC FUEL PUMP

Maximum delivery. Prevents vapor lock. Quick starts. Adjustable pressure feature. No starving or "flatten out." Eliminates stalling due to fuel surge. Recommended for today's high-compression motors. 6-volt and 12-volt models.



Ask for them at your car dealer, service station, garage or automotive parts store.



INSTRUMENT DIVISION
STEWART-WARNER
CORPORATION

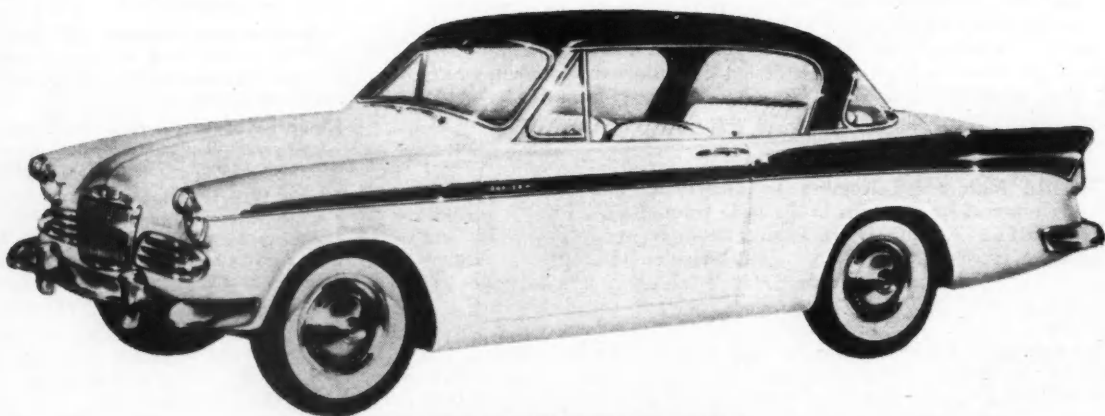
Dept. AL-49, 1840 Diversey Pkwy., Chicago 14, Ill.



HILLMAN

Experts rate the **HILLMAN** best!

POPULAR SCIENCE: "In the opinion of the writer, the Hillman—at the price—probably is the best buy among the more popular foreign cars selling under \$2000." **MOTOR TREND:** "Excellent choice as a small car for the one-car family. More power, sturdier engine... cruises easily at highway speeds. Even six-footers can find leg room to ride comfortably. Service and parts readily available." Five models—4-door sedans, convertible, 2- and 4-door station wagons—from \$1639 p.o.e. Western states, slightly higher.



SUNBEAM

Rally Champion

MOTOR TREND predicted: "The Rapier is an excellent road machine, and with its big-hearted engine, floor shift, improved steering and rugged brakes, it will have European rallyists talking to themselves!" And here are Sunbeam's latest achievements:

Winner of R.A.C. British International Rally! 1st and 2nd in its class in Circuit of Ireland Rally! First British car across the line in Monte Carlo Rally! Manufacturers' Team Championship in International Tulip Rally! 1st, 2nd, 4th and 5th in its class in the 2600-mile Alpine Rally—Europe's toughest! Sunbeam Coupe de Sport, \$2499 p.o.e.; 3-position convertible, \$2649 p.o.e. Western states, slightly higher.

Test-drive both of these performance champions at your Hillman/Sunbeam dealer's!

ROOTES PRODUCTS: HILLMAN • SUNBEAM • HUMBER

Rootes Motors, Inc., 505 Park Ave., N. Y. C., N. Y. • 9830 W. Pico Blvd., L. A., Calif. • Rootes Motors (Canada) Ltd., Toronto, Montreal, Vancouver



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SPOTLIGHT ON



LATEST ON SMALL CARS! Hottest subject in Detroit these days is that of small cars. Rumors are flying so thick and fast it's difficult to sort out facts. As example, various reports show Chevrolet has not just one but a number of small cars — all different. All publications are getting on the predicting bandwagon, but all can be wrong. Early this year, GM's public relations chief said, "... to announce a small car we would have to have one actually on the way — and as Mr. Gordon (GM's boss) pointed out yesterday — we are still studying such a project and haven't reached the point of no return." For what it's worth, here are specs on one of Chevy's small cars: 108-inch wheelbase, aluminum, opposed 6 of 140 cu. ins. giving 80 hp with 3-speed transmission and automatic optional (later a 4-speed). Performance — about equal to this year's Chevy 6. Engine at rear with independent suspension. Price — about \$1800. Incidentally, many conjectures and "actual photos" are of mockups with bodies that will probably never appear.

FURTHER CONFUSION IS ADDED TO SMALL CAR PICTURE Now there are reports that Pontiac, Olds, Buick and Mercury are to have small cars! Rumormongers have a two-way street. They can spread any talk they want, describing a car or cars in detail. If the rumors prove correct they say, "I told you so." If they never happen they say, "The company decided to drop its plans." If the product does not look like their description, they say, "The company changed design." It's best to sit steady and wait for facts.

FORD'S SMALL CAR, up until a short while ago, had been given the green light. As of this date it may be back on a "when, as and if" basis. Designs are completed. Production could start, but may not. If not, their designs could be made available to overseas subsidiaries. Basic styling of car will be considerably different from existing Fords. It will have ample interior room, good luggage space. So far, no complete model has made its appearance at any Ford proving ground.

COMEBACK OF ELECTRIC CARS, as mentioned in Feb. MT, has created considerable interest here. Oddly, some big companies have been doing research along these lines. They can see some real possibilities in the far future. (More on electric cars on page 74.)

AMERICAN MOTORS' PRESIDENT GEORGE ROMNEY is not making friends at General Motors with his suggestion that GM be split up into separate corporations and remarks like these: "... Not only has General Motors dominated the industry for the past 20 years, but, in the absence of an adequate and effective anti-trust policy, its competitors have existed only because of the pursuance by GM of policies that permitted them to exist. ... If GM should decide to operate at an average profit satisfactory for all industry, say 6 per cent, there would be fewer companies left in the automobile industry in a very short time. ..."

MORE ON GM "SPLIT" Early in February, GM was ordered by US Justice Dept. to furnish much info and records, lending substance to rumor that government is considering anti-trust action to split up corporation. Possible targets: GMAC and Chevrolet.

NEW ECONOMY CARBURETOR An inventor in Michigan claims to have a carburetor without a float bowl that needs no fuel pump and which gets "up to twice the mileage" of other carburetors. A fuller report will follow later.

TOP 20 SELLING CARS FOR '58 shaped up something like this: 1--Chevy, 2--Ford, 3--Plymouth, 4--Olds, 5--Buick, 6--Pontiac, 7--Rambler, 8--Dodge, 9--Mercury, 10--Cadillac, 11--Volkswagen (!), 12--Chrysler, 13--DeSoto, 14--Renault (!), 15--Studebaker, 16--Edsel, 17--English Ford, 18--Lincoln, 19--Fiat, 20--Hillman.

WILL CARS HAVE EVEN MORE GLASS? It's possible. Industry is now working on a product that could give us glass-topped cars soon. It's a sort of "transparent steel" with strength equal to or better than our present roofs. It has high heat absorption, something present-day glass lacks.

TWO NEW CAR DEVELOPMENTS One that will affect everyone is a transistorized ignition that eliminates coil and condenser (see page 70). Other may spell relief for smog communities — it's an anti-smog muffler (see page 86).

MT previews



Driving the Alfa Giulietta SS

AT THE TURIN SHOW IN 1957 a new prototype appeared which brought enthusiasts jostling like bees around a honey pot. It was a long, low, streamlined coupe of rare beauty built by Bertone to designs by Scaglione, who knows more than most stylists about the science of streamlining.

At this stage it was clearly intended as a competition model, with aluminum panels, plastic windows, lightweight interior trim and minimum frontal area, with overall height a little over 47 inches. But it was difficult to see how anyone of normal size could wear a crash helmet.

For a year only occasional snippets of information about modifications filtered through. But production has now begun and I had a short test run on one of the first batch of 20 cars.

Quite a lot of changes have been made. Length has been reduced by cutting overhang at front and rear and headroom has been gained by changing the contour of the roof.

But the whole character of the car has changed too. What was originally conceived as a lightweight racing model with aluminum panels and plastic windows is now a steel-panelled comfortably upholstered Gran Turismo coupe with wind-up glass windows and an engine very close to that of the latest Sprint Veloce, which has gained extra power in the past year.

Where then lies the advantage over the Sprint Veloce coupe? In three points at least: lower frontal area, lower drag from better streamlining, and a superb five-speed gearbox with Porsche servo-ring synchromesh engaging a set of ratios which seem to serve up exactly the right torque.

Steering is light and accurate but with a little over three turns lock-to-lock, it seems a little low geared at first on sharp mountain corners. I found that by swinging the wheel a full turn with coordinated use of the gas pedal the car could be placed exactly on the sharpest bends without changing the position of the hands on the wheel.

Balance and stability are excellent. The car seems to drift or slide without vice and there is no sideways shake or apparent roll. The inside rear wheel may squeal for a moment on a hairpin bend but wheel grip is extraordinarily good for a rigid

rear axle. The radius arms and diagonal control bar keep the rear wheels in firm contact with the road, as you notice when braking hard on a bumpy stretch.

The brakes, with spiral-finned front drums, seemed well up to the job as far as a short test could show. They presumably had anti-fade linings of fairly low friction coefficient but stopped the car quickly without heavy pedal pressure. The clutch handled full-throttle snap gear changes happily and the box, with the powerful Porsche synchromesh, was excellent.

This new Giulietta is tractable, too. Noise level is not unusually high for a sports coupe and the car will roll along quietly through town traffic at 15 mph in fourth gear.

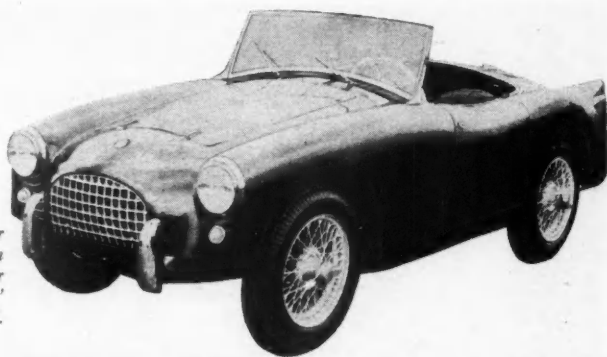
Fifth is treated rather like an overdrive and kept for the open straight stretches. There is a modest amount of luggage space which could make it a practical vehicle for trips short of the full holiday grand tour.

—Gordon Wilkins



Long tapered nose and finely drawn tail provide excellent streamlining to Sprint Speciale. Interior is comfortable, 5-speed shift lever well placed.

The plastic-bodied Turner will be prepared for export with either the BMC 948cc A-type engine in two stages of tune (48-50 hp or 58-60 hp), or 1098cc Coventry Climax. In mild tune, the "Firepump" produces 75 hp. All brakes have been enlarged.



The Vauxhall Victor is getting over its teething troubles. A number of unseen modifications have been made, and a number of noticeable echoes of obsolete Detroit styling have been eliminated, such as the pretentious front styling and rear bumpers. Instrument panel has been simplified, and there is a deluxe model. Prices for Victor wagons are reduced by about \$100, too.



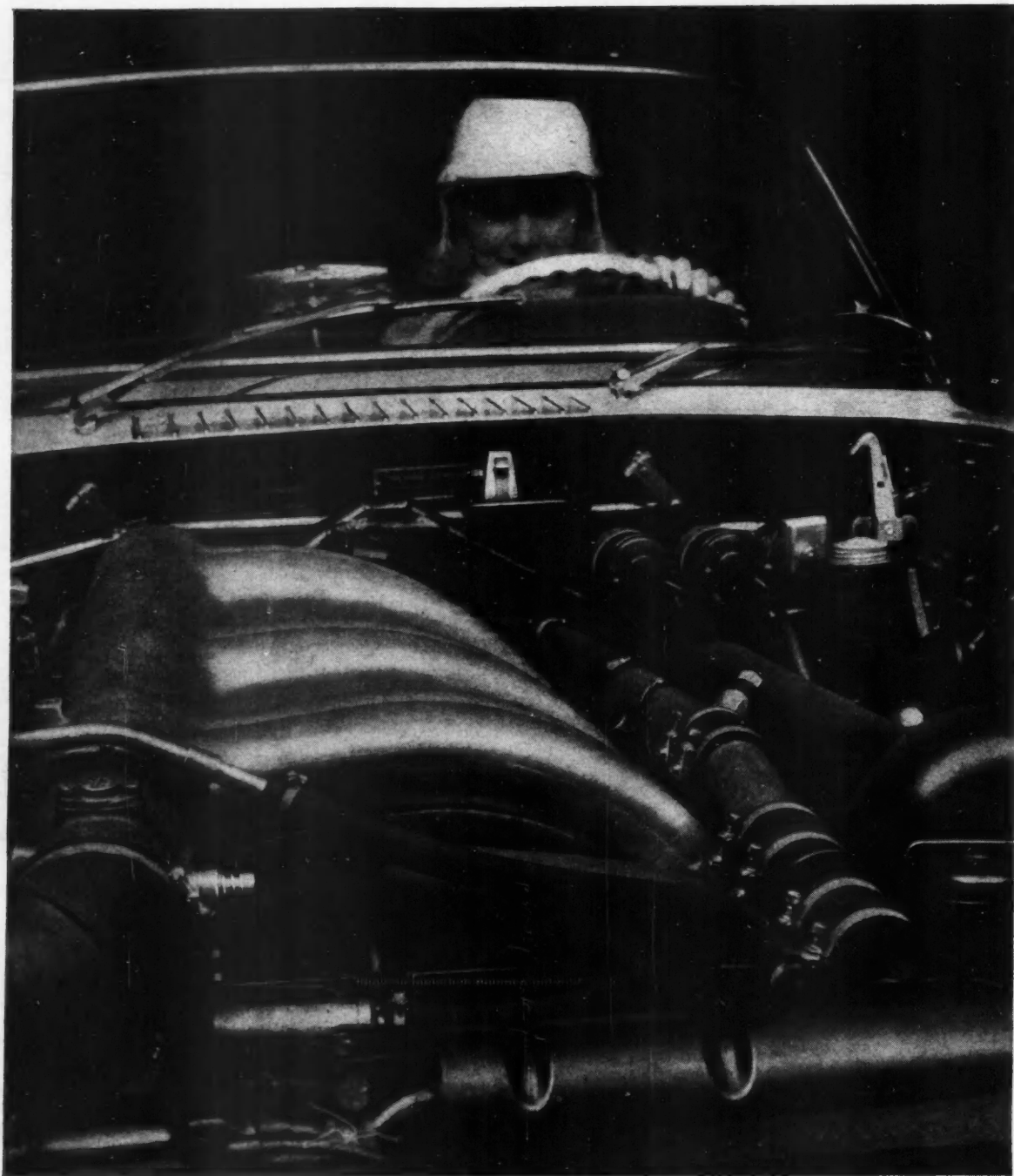
The MG Midget is the latest of the BMC line to be rejuvenated with a unit-construction body designed by Pinin Farina. It still keeps its MG identity, however, by the grille design and the hexagon badges on the hub caps and rear panel. Power rating is unchanged, but torque is increased for smoother low-speed running, especially since overall gearing has been upped for fuel economy.



The Seat 1400 is Spain's first attempt to win a prominent place in the modern sportscar styling field. Jose Serra, of Barcelona, molded the body to please the eye; however, there are more practical considerations. The car has no chassis. Suspension components are "hung" from the body. Performance of highly-modified 1400cc Fiat engine has been a closely kept secret.



GEORGE POIL



EINSPRITZMOTOR That's fuel injection. It's one of the secrets behind the incredibly tractable performance of the 3-litre, six-cylinder engine powering the 300 SL and the 300d sedan. The entire injection system is a masterpiece of precise performance. Fuel metering is exact and functions with unfailing regularity in smooth synchronization with the 4-cycle operation of the engine. Note how the entire engine is canted 40° to keep the 300 SL's lines low.

Mercedes-Benz Sales, Inc. (a subsidiary of Studebaker-Packard Corporation)

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AROUND THE WORLD IN 30 DAYS

A monthly summary
of the latest foreign car news
from our overseas correspondents

ENGLAND Vanwall, winner of the World Championship for Constructors in Formula I, was awarded the Dewar Trophy for the outstanding technical development in motoring during '58. Despite Tony Vandervell's retirement, team Vanwalls are not for sale. No parts; Tony will not keep racing department just for spare parts supply. Britain will still field at least three racing teams: BRM, Cooper, Lotus -- and possibly Aston-Martin. . . . Standard Motors (Triumph) have completely new models in the works, due this year. . . . Armstrong Siddeley Motors are merging with Bristol. . . .

UNITED STATES Proposals to prohibit competitive racing on state highways were introduced in Pennsylvania. The original proposal asked for an outright ban; it was placed in the hands of a committee for study. . . . 150 Lotus Elites will start to arrive right after Sebring. Jay Chamberlain has just returned from talking it over with Colin Chapman in London. . . . Montgomery-Ward and Heinkel had a deal to market latter in this country, but it fell through. Now the chain store outlet is looking for a "glorified" 2- or 4-place closed scooter for under \$1000. . . . Simca's tie-up with Chrysler seems to be working; January sales were 50% over September.

ITALY Presence of American production experts at Maranello has led to speculation that one of the "Big Three" is interested in acquiring Ferrari as a going concern. These reports were strengthened by Ferrari's recent statement that involvement in production might force him to abandon motor racing. . . . Fiat will introduce an 1800 at the Geneva show with body by Boano and six-cylinder overhead-cam engine developing 72 hp for 93 mph. A more luxurious 2100 version produces 84 hp for 100 mph. . . . Maserati has been bought by Rheinstahl A.G., one of the Krupp Group. Reports are that production of cars will continue, with a Formula I car possible for '61.

CZECHOSLOVAKIA Skoda will introduce a new version of the 440 called the Octavia. With improved suspension, new grille and design changes, engine options will be 1100cc or 1300cc. These changes will also be carried to the Sports Convertible.

FRANCE Simca's new Fulgar dream car shows that European engineers have their flights of fancy, too. A full-scale model, its front wheels are controlled by servo-steering up to 90 mph. At this point they retract, and the car planes on its rear wheels only, steered by rudders! Rear wheels are driven by electric motors but it's set up to take current by induction from just-as-futuristic road-imbedded cables. . . . French cars again took top honors in the Monte Carlo Rally, with a Citroen ID-19 taking first in general classification, Simca second, a DB third and another ID-19 fourth. Team prize went to three Jags. Out of the 322 who started from Paris, Stockholm, The Hague, Glasgow, Athens, Lisbon, Munich, Rome and Warsaw, only 220 reached Monte Carlo. Two-thirds finishers is still a high percentage.

HOLLAND First production DAF's should be rolling off about now. No exports yet, first models for home use.

GERMANY NSU Prinz is being outfitted with a new Sport-Prinz 40-hp engine, capable of 90 mph. . . . BMW is still waiting for the money to start production of its new 1600. They're talking with the Bavarian government now. . . . There are rumors of a 1500cc Mercedes, perhaps built by the Auto-Union works. New bodies—rumors have it—on the Mercedes 200-S for the Frankfurt Show. . . . There's talk at Borgward that some Bosch-injected 1500-RS sportscar engines are going to Rob Walker in England for his Coopers. Stirling Moss plans to drive some Formula II races with a Borgward-Cooper, and Borgward wants him as a driver if and when they go into Formula I.

SWEDEN Volvo turbine experiments "have not reached the stage where we can publish anything about them."

MT SELECTS

PONTIAC-



TO ANY STORY there are many parts. In the story of MOTOR TREND's selection of the '59 Pontiac as "Car of the Year" and our presentation of the 1959 MOTOR TREND Award to the Pontiac Motor Division, there are at least four parts.

The first of these is an explanation of what the award is—why we established it. The second is a rundown of previous award winners since its inception in 1956. The third is a brief discussion of the '59 cars and features we considered worthy of consideration for the 1959 award. And the fourth—the reasons why we chose the Pontiac this year.

WHAT THE AWARD IS

When the MOTOR TREND Award was first established we announced that it was going to be presented each year to the automotive manufacturer making the most significant advancement on a U.S. production car. At that time—and in each succeeding year—the selection was to be made only from production cars.

We were to disregard any changes that had been made strictly for the sake of change alone. We were to weigh the meaning of the initiation of any program or philosophy. We were to ignore improvements that should have been made

and which would merely be bringing the car "up to par."

Armed with these thoughts, each staff member was then asked to submit his selection from among the cars and their improvements that were mutually agreed to be worthy of consideration. When all the choices were in, there was a round-table discussion to arrive at the final selection.

'59 CARS AND FEATURES CONSIDERED

Before the final selection was made this year, these were the features and cars that were considered:

Buick and its improved brakes.

In 1958 Buick had great success with finned, aluminum brake drums on their front wheels. This year they developed a new process for bonding a steel liner to the aluminum drum. This provides a better contact surface, greatly improves heat transfer, and thereby reduces the tendency of the brakes to fade.

Cadillac and its new shock absorbers.

By the use of airless shock absorbers (actually using Freon gas) Cadillac engineers developed a captive air system. This eliminates the problem common to

hydraulic shocks—that of reduced efficiency due to frothing and loss of density because of the constant piston action within the shock.

Chevrolet and its improved brakes.

Engineers at Chevrolet increased brake lining area, and came up with a flanged drum and slotted wheels. The under-car air now is forced by and through the drums more effectively, improving heat dissipation.

Ford and its two-speed automatic transmission.

The optional two-speed transmission has over 100 fewer parts than the standard Ford automatic transmission. Servo bands for low and reverse, with a multi-disc clutch for direct drive, should make for an efficient and maintenance-free unit. It should also point the way to an eventual constant-speed drive.

General Motors' rotary valve power steering.

GM engineers have developed a rotary pump for fluid pressure control. This eliminates the necessity of sliding valves and the attendant lesser lack of sensitivity. With the new system, there is practically no lost motion. There is also automatic compensation for wear within the unit.

continued

AS CAR OF THE YEAR

1959 MOTOR TREND AWARD

Presented annually to the
U.S. Manufacturer making the
most significant engineering
advancement

TO PONTIAC

With its wider track
and the year's best
combination of
handling, ride
and performance.

PREVIOUS AWARD WINNERS

Year Car or Company

'58 FORD THUNDERBIRD

"The overall concept of the '58 Thunderbird—a car that combines safety with performance, and comfort with compactness."

'57 CHRYSLER CORP.

"Superior handling and roadability, qualities in their Plymouth, Dodge, DeSoto, Chrysler and Imperial."

'56 FORD MOTOR CO.

"Its contribution to automotive safety by providing the interior safety package on Ford, Mercury, Lincoln and Continental cars."



Why we chose the PONTIAC-

EVER SINCE THE PONTIAC WAS ANNOUNCED we have been aware of the great improvement the wider track makes in the car's handling. It was far from just a press agent's harebrained idea. Here's what we have said in previous issues.

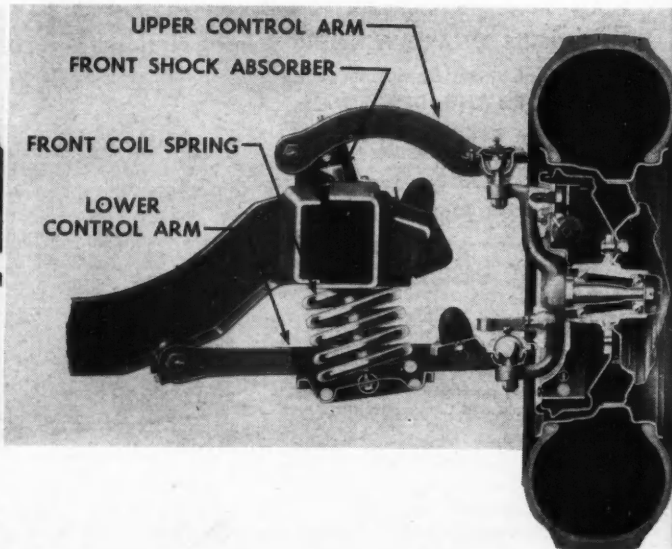
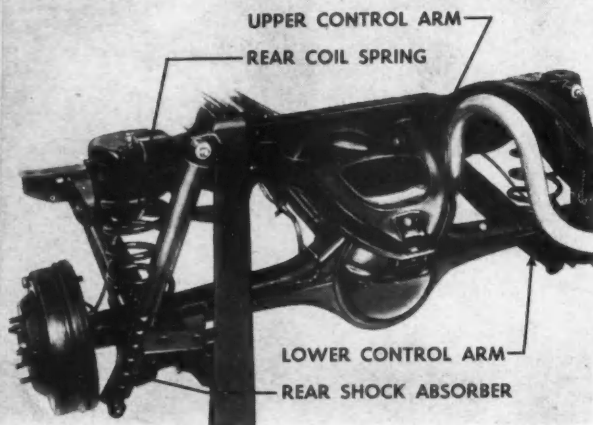
In our announcement story (Nov. '58):

"... In the handling department the car deserves rather high marks. A factor that contributes to this is the exceptionally wide tread front and rear. . . . This 'outboarding' results in

very good stability on turns, while still providing soft riding qualities on straights. . . ."

In our technical analysis of the '59 cars (Jan. '59):

"... The contact points with the ground being closer to the outer limits of the body and chassis give a squatting effect that enables improved handling characteristics. Increasing track width effectively lowers the center of weight, providing a greater safety rollover factor. . . ."



as CAR of the YEAR

In our road test (Mar. '59):

"... Very stable on curves, mild or sharp, with lean greatly reduced due largely to wider tread. . . . On really fast, sharp turns all four wheels stayed on the ground. . . . As we headed the Pontiac into the first sharp uphill turn . . . the curve seemed about a third of its regular width, but got wider each time around as the car stuck like glue in the groove. . . . Has good tracking that requires a minimum of wheel correction, even on cambered roads. . . ."

In summing up, we said, "It is difficult to list Pontiac's best points without putting the new wide tread first. This improvement contributes so much to ride, handling, comfort and safety that other manufacturers are sure to follow . . ."

Our appraisal today:

When Pontiac decided to widen their tread, increased roll stability was a natural consequence of the change, since roll rate in a car varies as the square of the tread. The stability of the 1959 Pontiac is not only the outstanding automotive advance of the year, but it has led to a more comfortable ride. Everyone considering a new car should experience it. This combination was accomplished by selectively reducing the wheel spring rate (a measure of flexibility). For example, even though the rear spring rate of the Catalina was reduced nine per cent, the net roll stiffness was upped 14 per cent. This results in the ability of the Pontiac to take a sharp curve without discomfort and also improves ride softness—a significant step toward resolving the compromise between ride and handling.

An added safety factor can be laid at the feet of the wider track. With more roll stability, steering geometry change in

severe cornering is less and the possibility of leaving the road in a fast turn is therefore reduced. Greater resistance to crosswinds is another noticeable advantage.

Aside from the technical aspect, Pontiac's lines are clean, simple and beautiful. It has a fleet look, a trim appearance. The wide wheel design contributes greatly to its overall integrated styling. Any comparison with narrower-tracked cars readily shows the difference.

And in the performance/economy vein, there is a choice of two engines: the efficient 420-E Tempest economy engine and the higher horsepower (up to 345) performance engine. The economy engine offers remarkable performance when you consider the exceptionally high mileage on regular grade gasoline. The performance engine makes Pontiac again a top performer, based on our extensive road testing. Acceleration is outstanding, yet the engine is unusually quiet and smooth.

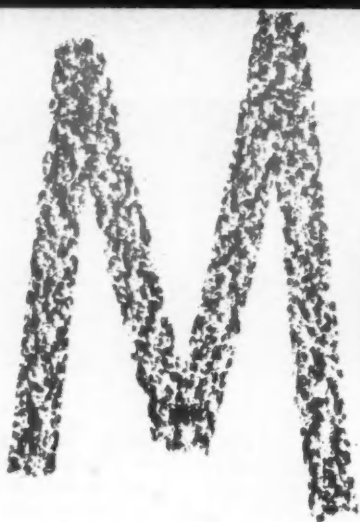
Pontiac's decision to adopt a wide track for their '59 cars required design changes in the frame, axle shafts, and axle housings. What particularly intrigues us—beyond the change for the better with the wider tread—is the possibility that this change presages an even more important one: the trans-axle (transmission relocated at the rear in combination with a swing axle). We hope so.

In the meantime, however, Pontiac is certainly the best balanced passenger car in America. We firmly believe that in moving the wheels farther apart, to develop the widest stance of any American car, Pontiac has created an entirely new sense of balance and handling security. And they are also most deserving of the 1959 MOTOR TREND Award for the year's most significant engineering advancement. /MT



what makes you think you can't save

by William Carroll



Interview with tax consultant discloses money-saving tips

ALL OF A SUDDEN IT STRUCK ME that income tax time was almost here, and nothing had been done about it. A phone call and five hours later I was unhappily squirming in the "hot seat" of an accountant's office. What follows is a tape-recorded interview of the questions I asked and the answers I got. I'm sure that what I learned can be of benefit to *all* car owners, whether you drive your car for pleasure or use it in your work.

Q. Is it true that there are only two basic tax classifications of cars: those used for pleasure and those used all or part of the time to make a living?

A. Right you are. More important is the fact that our government takes the position, "No expense is normally deductible unless you have records to prove the expense." If you have records, it becomes the government's problem to disprove a claim they believe is wrong. But, if you have no records they can disallow everything they want to.

Q. If I can prove I drove 9500 miles last year and bought 750 gallons of gas on which I paid six cents state tax—is that a \$45 deduction?

A. Right again. Of course, don't claim Federal gasoline taxes. They're not deductible. I tell my clients to buy a Gasoline Record Book and mark mileage each day. An agent would have a difficult time cracking one of these. An alternative is one the government has accepted, although there's no published ruling on it: If you have failed to keep individual records of gas, oil, repairs, etc., you should have a record of miles driven each year. Then take a reasonable mileage deduction based on seven or eight cents a mile. Tax collectors might go along with this if they believe the mileage records are accurate.

Q. What about credit cards?

A. Very good idea. The only thing about credit cards which causes trouble is when a man uses a car for business but permits his wife to use the same credit card. A sharp agent will spot Mrs. Jones signing for gasoline and disallow a goodly portion of the total deduction. The thing to do is restrict credit car purchases to yourself and let your wife walk or buy her gasoline from the egg money.

Q. Let's get into the question of a pleasure car. My wife

uses her car only for personal driving. We know you can't deduct for driving a car to work, and she has kept no records. Are there any legal deductions for her?

A. Yes, though this may seem surprising. There are deductions which every taxpayer has that are valuable only if every deduction is listed on the return. If your wife takes the Standard Deduction (10 per cent) it includes automobile expenses, donations, interest and all other deductions. This easy way out may not be fair if she drove an unusual number of miles last year. If she *does not* take the Standard Deduction, her possible deductions in connection with a personal automobile are: 1) A deduction for license fee paid, which everyone can find out from the state license office. 2) A deduction for state gasoline taxes paid. Just figure how many miles she drove, miles per gallon from her car and multiply number of gallons by the amount of state gasoline tax per gallon. 3) She might have a deduction of interest on payments for buying the car on terms. You can check the contract or call up the finance people. They will tell you how much the interest is.

These three big deductions are normally available to everyone who drives an automobile. Less frequent deductions are use of a car for charitable work or in traveling to a doctor's office or hospital for medical treatment. But the only way you can claim these latter items is to keep an accurate record of mileage driven and figure the deduction on the basis of seven or eight cents a mile. One other possible deduction is less fortunate, as it involves an accident.

Q. What can be good about an accident?

A. It's an item known as a Casualty Loss. If you have an automobile accident, that portion of your expenses not repaid by someone else is deductible by you. If the insurance company pays \$50 of a \$100 repair bill, you deduct only the \$50 you paid. Remember, this is a deduction for a Loss, not an Expense. Therefore, if your car is damaged to the tune of, say . . . \$100, the Casualty Loss to your car is \$100. Without money to make the repairs, you can deduct the whole \$100, though you didn't have the car fixed. This is legal because the car is worth \$100 less after the accident than before, as a result of the unrepaired damage.

Q. Suppose I go on a trip with someone. They drive their car. I buy the gasoline. May I take the deduction for gas

NEEY

on your income TAX?

for every car owner. Are you taking advantage of them?

tax paid even though it was not for my own automobile?

A. Sure thing. The deduction is for the person who pays the gasoline tax.

Q. What about a car pool? Suppose I'm paying two bucks a week to ride to work?

A. I think that if two dollars is your share of the gasoline, you might figure it as so many gallons of gas. Then deduct the state tax paid, based on the number of gallons purchased by your money. This could be a deduction. But remember, you can't deduct the whole \$2, as going to work costs are not deductible.

Q. What if I use my car for both business and pleasure. How should I keep these deductions under control?

A. The best way is to keep detailed records of all car expenses. That means every item: gasoline, oil, lubrication, washing, repairs, tires, supplies, garage, parking, insurance, etc. In fact, everything that has to do with or is in any way connected with your car including motor club memberships, state and city business car licenses.

Q. How about subscriptions to automotive magazines?

A. Sorry, but that doesn't come into it. A shop manual, if you were going to keep the car up yourself, might conceivably be a deduction. Now, if you have a complete record, the government prefers you to split the expenses between business (anything connected with earning a living is business mileage) and pleasure driving (not connected with earning a living) by means of mileage. For example: If you drove 10,000 miles and 4000 of that was business mileage, then 40 per cent of all car expenses is deductible. And certain other items may be totally deductible. You might pay parking fees *only* when downtown on business. Therefore, all parking fees, not just 40 per cent of them, are legitimate deductions.

Here's an item often missed by persons using a car for both business and pleasure. Deductions for license and state gasoline tax are split by the percentage of business and pleasure mileage. This means that on 60 per cent of gasoline purchased you lost the deduction, as you did on 60 per cent of the license tax or interest on payments. But on this 60 per cent of non-business car expenses you and every other taxpayer are entitled to deductions for state gasoline tax, license tax and interest on

car payments. When you take these deductions apart from the list of car expenses, mark them "Taxes not deducted elsewhere," for it is legal to take part of a deduction one place and the other part elsewhere on the return—if you explain what you have done.

Most people don't know there is available from Internal Revenue offices free help in Form 2106, "Worksheet for Taxpayers Claiming Local Transportation Travel or Outside Salesman Expenses Incurred as an Employee." The front has fill-ins for Outside Salesmen, while the reverse of 2106 has space to figure allowable expenses for an automobile used for business. Fill out the form and there are your expenses. I'd suggest you send it in with your tax return to reduce questions about what you called a reasonable deduction.

In the upper left corner of the back of Form 2106 it's headed "Total of all Automobile Expenses for Year (Exclusive of depreciation)." Below is a space to list money spent for gas and oil, lubrication, washing and repairs.

Q. Is there anything special I should know about repairs?

A. Anything you would consider a repair to an automobile is—well . . . a repair. You might list on a separate sheet of paper the cost of motor tune-ups, brake relining, new windshield wiper motors, etc. I'd even consider towing as part of repair.

Q. The back of Form 2106 has a space for "Tires and Supplies." What do they mean by that?

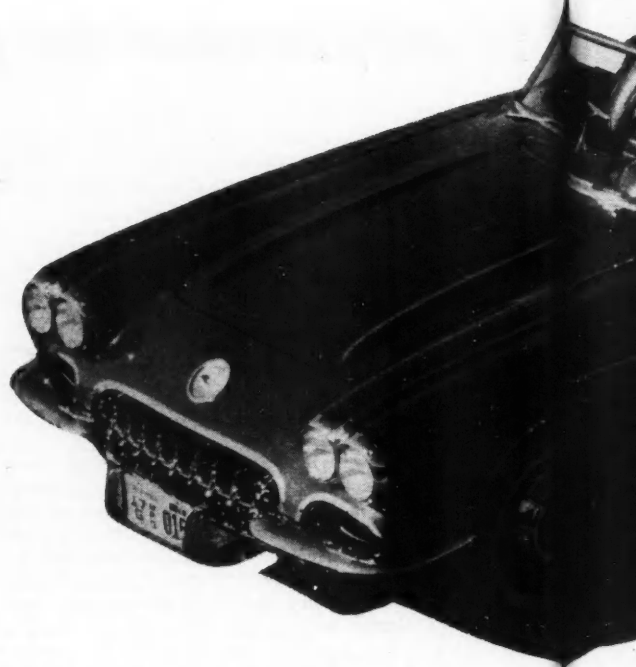
A. Under Supplies you might include wax, polish, anti-freeze, new wiper blades, and even seat covers. Under "Garage and Parking" be sure to include tips paid attendants to handle your car carefully. "Insurance" should be easy to fill in. The last line, "Other," is for oddball items that might not fit elsewhere. Just keep in mind that if you itemize it is considered evidence you spent the money. Then it's up to the agent to disprove your claim. It may sound like passing the buck, but if you don't list the specific items, it is up to you to prove the entire claim.

Q. How about money paid for a traffic fine?

A. Under no circumstances are police tickets deductible. The theory of income taxes is that any expense against public policy is non-deductible. You were driving contrary to public policy (the law) and were cited for doing so. Therefore, no deduction.

continued on page 64

P CORVETTE SCHE



YOU'VE REALLY STUCK YOUR FOOT IN IT NOW. "How's that?" I asked. "It can't be done. You can't compare a Corvette with a Porsche. How unlike can two cars be?"

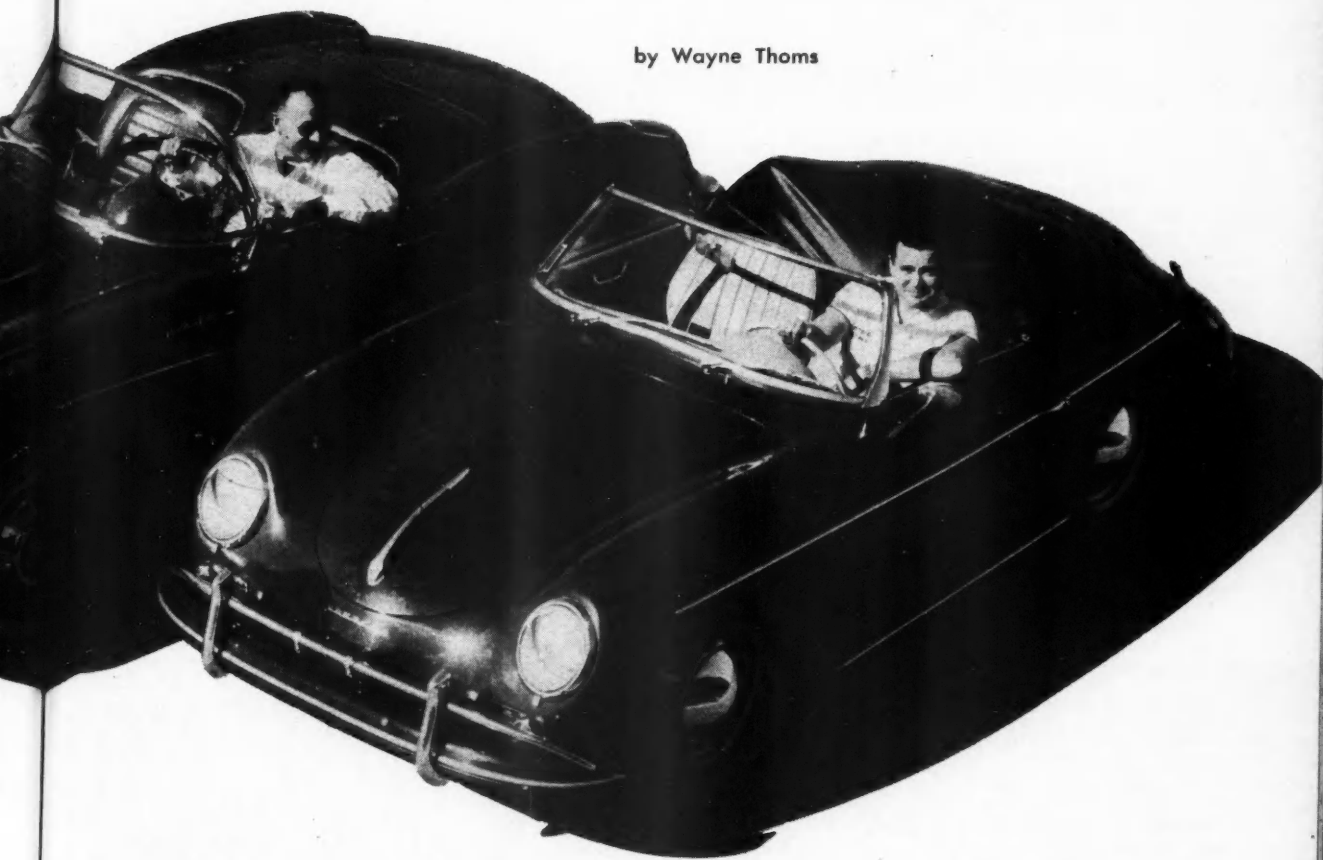
Briefly that was the feeling among some of the MT staff members when we decided to compare these two sportscars. On the surface they would seem to defy comparison. But dig a little and see how much alike they really are.

Both are in the \$4000 price class. The Porsche Convertible D (replaces the Speedster) is slightly under—\$3745 delivered on the West Coast. Our 250-hp soft-top Corvette rolls out in Los Angeles for \$4375 including heater and four-speed gearbox.

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Both are priced in the \$4000 class. One is Europe's best sportscar in this category; the other America's best — and only — sportscar. How do they compare in handling, ride, performance?

by Wayne Thoms



Cost of fuel injection, \$484, has not been included. (Although our test car carried an injection system, it does not materially affect overall performance. See "Sam Hanks Tests Four Corvettes," MT, March 1958.)

The obvious difference in the cars is power. No one denies that the Corvette has pure brute force available—power which makes the Porsche's 70-hp standard engine seem puny. But that force has to be transmitted to the ground, converted into forward motion, stopped, turned, controlled — sometimes by persons who don't fully realize the potential dangers involved. The result is that for all practical purposes a lot of that horse-

power becomes excess—an unusable excess. We're not knocking the Corvette. It's an exciting handful of performance which is not duplicated for the money, even from countries where labor is considerably cheaper than in the U.S.

Let's see how the two cars stack up, point by point, in areas where they are comparable.

How well are they put together?

We enter two schools of body building—steel vs. fiberglass. If you have definite feelings against fiberglass, consider revising

COMPARISON TEST continued



Corvette Convertible

your views. Corvette's 'glass work is smooth and every bit as functional as steel. During minor prangs it will come off unscathed, absorbing amounts of energy which would dent steel panels. Our only objection is to a certain amount of flexing around door jambs which means a few creaks and groans, apparently congenital in fiberglass construction. Panels match properly, doors close in a satisfying fashion; it is a carefully constructed automobile.

The Porsche is a masterpiece of precision fitting and close tolerances in its body construction. The wonder is that any coachbuilder can work so accurately. There aren't many cars in the world that are turned out free from visual defects, but the Porsche approaches perfection as nearly as can be.

After squeezing inside, what?

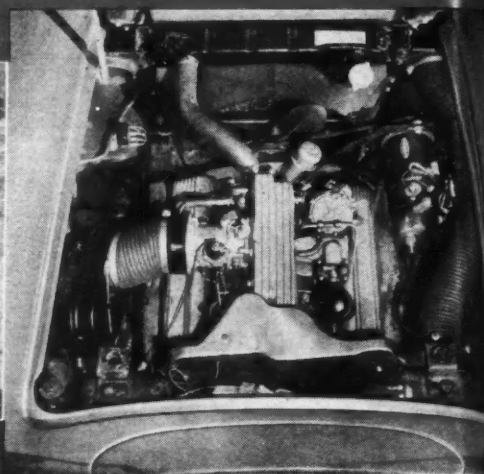
They're both sportscars and require a technique for entry and exit. It is really no problem and is, in truth, not as difficult as exiting from the rear door of some domestic '59s parked alongside a curb.

Visibility in both is perfect with tops down, limited in the rear quarter areas with tops erected. Designers of both cars kept the driver in mind when vital instruments were installed. Speedo, tach and the rest of the gauge layouts are clearly visible through the wheel.

Seating is a critical factor in sportscars. The consensus was that Porsche's well-upholstered, fully-reclining bucket seats are almost too good. They offer excellent support but tend to be overly soft, especially as compared to seating in previous year models. Individual seats in the Corvette are comfortable but could use added support under the knees. Both cars would benefit from adjustable steering columns. To obtain arms-out seating in the Corvette, for example, the seat must be run so far back that it is nearly impossible to fully depress the clutch.

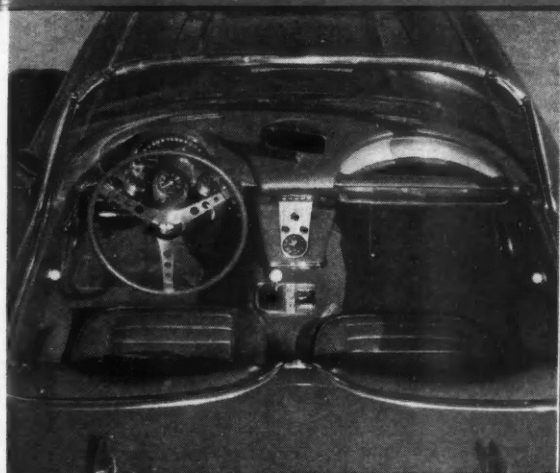
How easily do they start?

Both engines turn over easily, starting quickly hot or cold. The Porsche has no choke, but a husky accelerator pump shoots big charges of raw gas through the carbs, giving a rich choke



Porsche Convertible D





effect. Porsche carburetor heating is different. A pair of thermostatically controlled tubes blow hot air directly on the carburetors as the engine warms up.

How are they for city driving?

Both cars are good traffic machines requiring different driving techniques. We must give a slight edge to the Porsche here because quicker, lighter steering makes moving through tight traffic less of a chore. We found that most of the Porsche's city work was in second and third gear in order to avoid the overdrive fourth and to keep the revs in the "happy zone" above 2500 rpm. Torque from the Corvette is so fierce that the engine can loaf along in fourth, say at 20 mph, and pull away smoothly, although third is a more satisfactory traffic gear. Pushing the Corvette through town, the sensible driver will rarely exceed 2500 rpm.

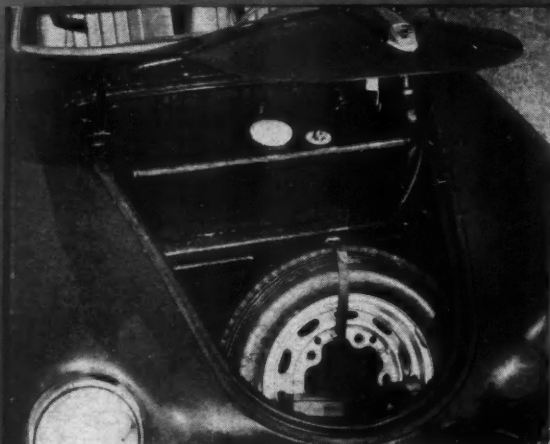
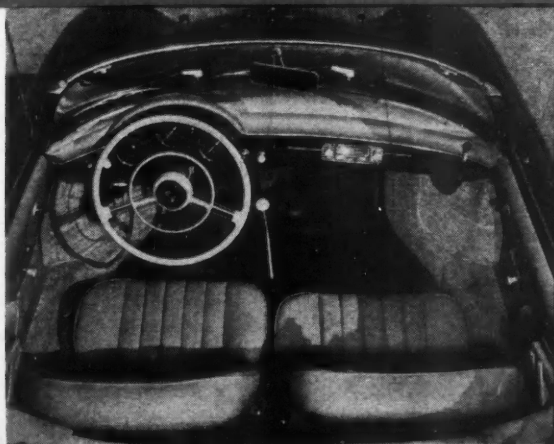
How about open-country driving and high-speed handling?

Being forced to choose one of these cars in which to make

a cross-country trip would be difficult. Both of them are capable of speeds far in excess of any legal speed limit. The Porsche will cruise all day long at 90 mph—comfortably; so will the Corvette—even faster. And make no mistake. This Corvette will handle. It corners flat and can be jockeyed through a hot turn with surprising ease.

Firmly suspended, as good handling sportscars should be, these two cars vary considerably in riding qualities. The Corvette rides harshly with a substantial amount of pitch and chop on rough roads. The same routes are gobbled up by the Porsche's four-wheel-independent suspension with a minimum amount of shock transmitted to driver and passenger.

Match the two cars on a tight mountain road where the Corvette's torque and acceleration can't be utilized and you'll probably get there quicker in the Porsche. It just hangs on better in the turns. If this mountain road should be downhill, the Porsche's brakes will outlast the Corvette's. The Germans have installed brakes that stop in a hurry and refuse to fade. Corvette's standard binders are more than adequate for normal use but for competition or extremely hard use, the optional



Acceleration

	Corvette	Porsche
0-60	7.8 secs.	15.2 secs.
Quarter-mile	15.7 & 90 mph	19.9 & 67.5 mph
30-50	4.2	5.9
45-60	3.2	6.1
50-80	6.3	19.6

Top Speed

(Test cars, estimated) 120 mph 103 mph

Handling

(Comparative time around 3.3-mile Riverside Raceway road course)

2 min. 32 secs. 2 min. 47 secs.
Avg. 78.5 mph Avg. 71 mph

Fuel Consumption

Stop-and-Go Driving	14.3 mpg	24.5 mpg
Highway Driving	14.9	35.0
Overall Average	14.6	29.7

(Fuel Used: Mobilgas Special)

Cerametalix lining is a must. Because it works best when hot, it is not recommended for idling around the city.

Both cars are blessed with four-speed, all-synchro gearboxes. Porsche takes justifiable pride in theirs but we prefer the Corvette's. It's smoother, faster and has a shorter throw between gears—qualities which rank it with the best in the world.

How about fresh air, heating and defrosting?

Here is an area where Detroit engineers, attuned to the luxury requirements of their customers, have an edge on overseas sportscar designers. Porsche has a perfectly good hot air heating and defrosting system, better than most other sportscars. The Corvette has a flexible system of heating, ventilating and defrosting which will warm up sub-zero days or take the edge off a nippy Southern California night with equal ease. It has been designed with passenger comfort in mind rather than installed as something which works but which no true enthusiast will be using anyway.

Did someone mention fuel economy?

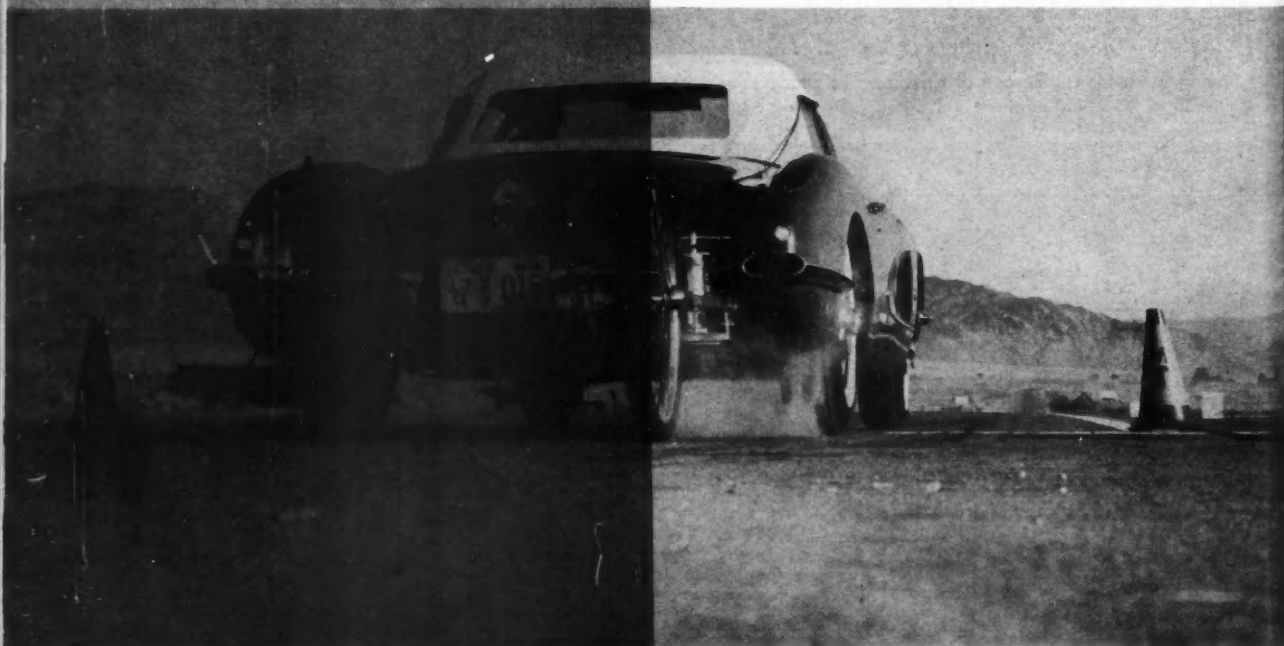
First of all, sportscars shouldn't be purchased for economy. The nature of their use—fast acceleration, high speeds, use of intermediate gears—precludes good mileage figures. The Porsche is an economical exception with open-road, fast cruising figures of 35 mpg and mileage in congested areas averaging 24.5 mpg. Combining the Corvette's city and open-road fuel consumption gave us 14.6 mpg—really not too bad for 283 cubic inches constantly begging to be opened up.

Where do I put the suitcases?

There is luggage space enough for two persons in both cars. The Porsche stows it behind the front seats, occupying the occasional rear seat. A conventional trunk in the Corvette will take about the same amount of material as the Porsche. There is a very limited amount of space under the Porsche front hood.

How about service?

The Corvette's obvious advantage is parts and service from thousands of Chevy dealers across the country. Porsche service, often combined with Volkswagen, is fairly good but the dealer distribution will never approach Chevrolet's. Corvette's high-



performance V8 gets expensive to maintain when the owner insists upon the ultimate in performance. On the other hand, the specialized nature of Porsche maintenance has kept repair prices high. It adds up to the fact that sportscars are luxury items with upkeep prices to match.

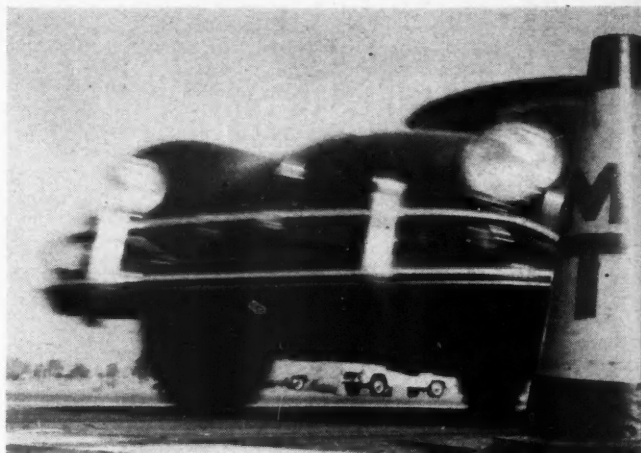
Which one is the best buy?

Depends on what you want in a sportscar. Both have a lot to offer. If getting a lot of performance from a precision-built, small-displacement engine is intriguing, then the Porsche is the answer. If you like the idea of having one of the world's fastest accelerating sportscars, then pick the Corvette.

MT staff members became extremely partisan—on both sides of the fence. Feelings were evenly divided except for one nameless male who refused to choose, insisting that he would be happy only with both cars.

The truth is that both are excellent buys. They're sturdy, reliable, comfortable and above all, fun to drive. What more can you ask of a sportscar?

/MT



CORVETTE

ENGINE: Ohv V8 with rockers. Bore 3.88 in. Stroke 3.0 in. Stroke/bore ratio .78:1. Compression ratio 9.5:1. Displacement 283 cu. in. 1 4-bbl. carburetor. Dual exhaust. Advertised bhp 250 @ 5000 rpm. Bhp per cu. in. .88. Piston speed @ max. bhp 2500 ft. per min. Max. torque 305 lbs.-ft. @ 3800 rpm.

TRANSMISSION: Manual shift, 4-speed all-synchromesh. Ratios 2.20:1, 1.66:1, 1.31:1, 1.00:1.

CHASSIS: Welded box section frame with I-beam X-member. Front suspension—Independent ball joint, with long and short control arms, coil springs and tubular shock absorbers. Rear—Solid axle, with outrigger-mounted semi-elliptic leaf springs and tubular shock absorbers. Axle torque taken by radius rods. 6.70 x 15 tires. Steering—Saginaw semi-reversible

worm and ball bearing, 3.7 turns lock-to-lock, ratio 21.0:1. Rear axle—conventional, ratio 3.70:1.

DIMENSIONS: Wheelbase 102 in., overall length 177.2, overall height 51.6, overall width 72.8, front tread 57, rear tread 59, rear overhang 42.4.

PRICE: Factory-suggested retail price of test car equipped with heater and four-speed gearbox—delivered Los Angeles, \$4375 plus taxes.

PORSCHE

ENGINE: 4-cylinder opposed, air-cooled, ohv with rockers. Bore 3.25 in. Stroke 2.91 in. Stroke/bore ratio .9:1. Compression ratio 7.5:1. Displacement 96.5 cu. in. (1588cc). Advertised bhp 70 @ 4500 rpm. Bhp per cu. in. .73. Piston speed @ max. bhp 2180 ft. per min. Max. torque 81.2 lbs.-ft. @ 2800 rpm.

TRANSMISSION: Manual shift, 4-speed all-synchromesh. Ratios 3.09:1, 1.76:1, 1.22:1, 0.85:1.

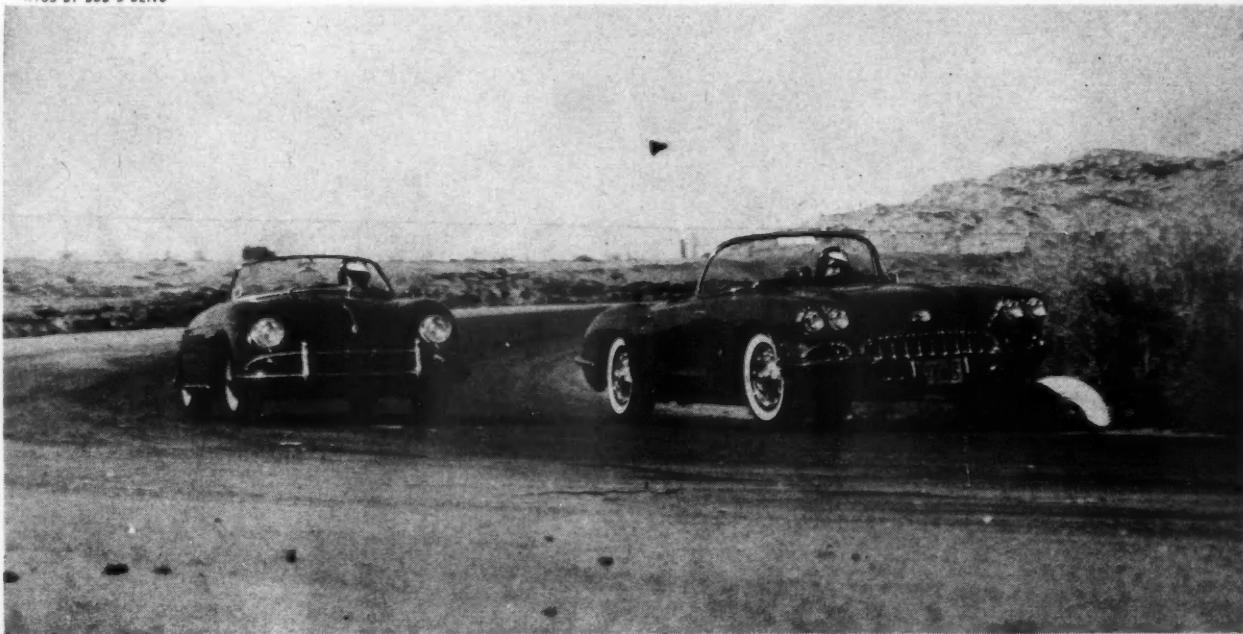
CHASSIS: Pressed steel welded in box section, unit body-frame construction. Front suspension—Two transverse torsion bars and trailing arms, anti-roll bar, tubular shocks. Rear—Swing axle, transverse torsion bars and trailing arms, tubular shocks. 5.60 x 15 tires. Steering—ZF worm gear with hydraulic damper,

2¼ turns lock-to-lock, ratio 16.0:1. Standard rear-end gears 4.43:1.

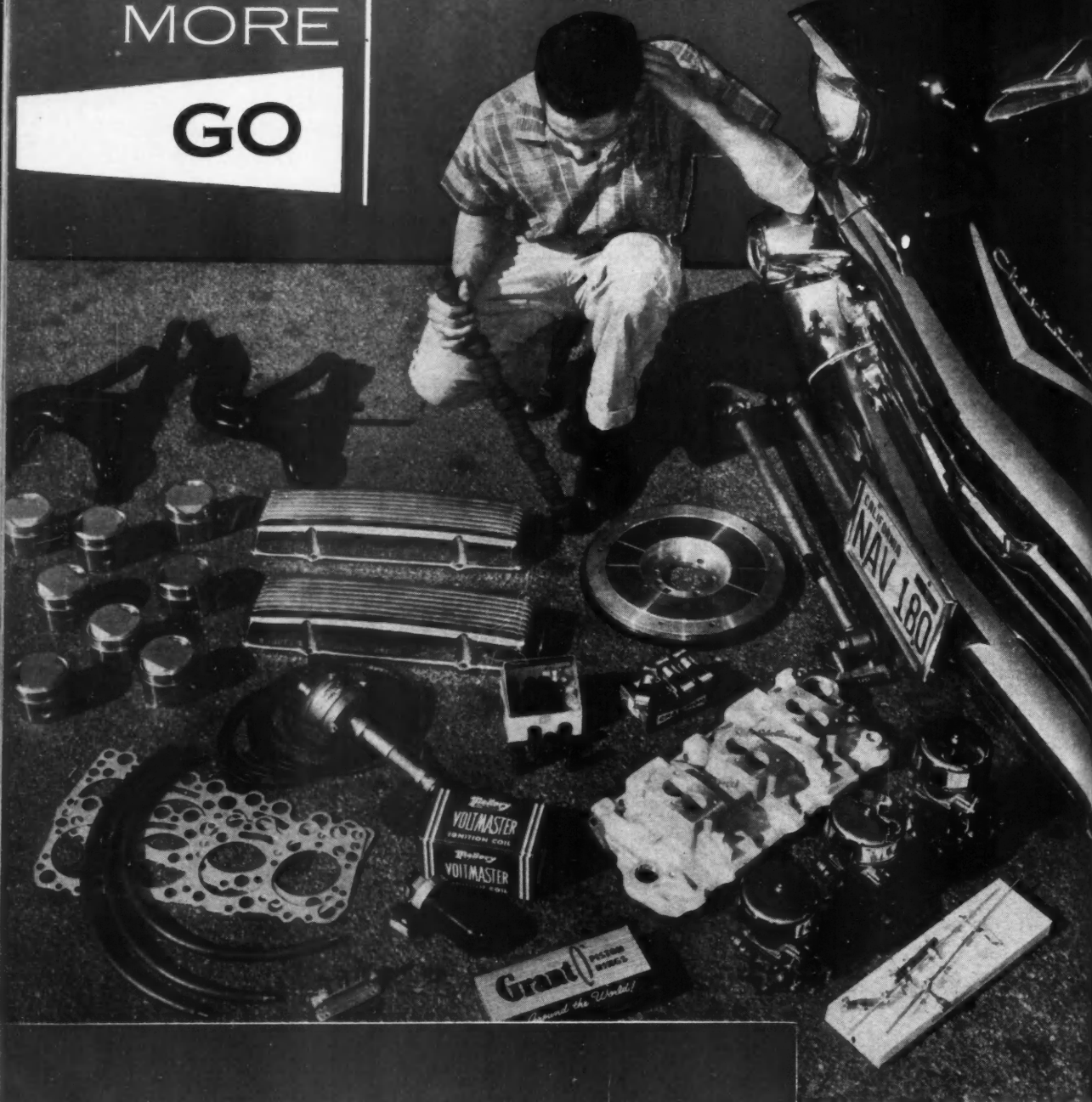
DIMENSIONS: Wheelbase 82.7 in., overall length 155.8, overall height 51.5, overall width 65.6, front tread 51.4, rear tread 50.1.

PRICE: Suggested retail price of test car equipped with heater (standard) and four-speed gearbox (standard)—delivered Los Angeles, \$3745, plus taxes.

PHOTOS BY BOB D'OLIVO



GETTING
MORE
GO



Here, in the first article of a series on customized performance, are the basic principles involved in getting more power from your engine.

PHOTO BY BOB D'OLIVO
DISPLAY BY BELL AUTO PARTS

"I'VE GOT A CAR THAT I LIKE. It's not a new car, but it's not an old one, either. There's only one thing—it doesn't break away from traffic signals fast enough, and on long hills it starts to bog down.

"My teen-age son wants to 'modify' it. I almost let him go ahead, until I spoke to my neighbor, who's an engineer. He said that changing the car would produce more grief than benefits.

"I told this to my son. He laughed. He said because a man's an engineer he doesn't necessarily know everything. Besides, he isn't an automotive engineer. The men who *really* know are the first ones to 'bolt on a blower' and put on a set of 'real clean headers.' I think by this he meant that they supercharge the engine and provide a straight-through path for the exhaust.

"But anyway, what is the story on modification? Is it worthwhile, from the standpoint of extra power equated against cost? Will the engine fly apart after a couple of weeks of commuting? I don't want to drive to work in one of these dragsters, but I do want a little more power."

This is a fairly typical situation. Questions like this are asked of *MOTOR TREND* all the time, which is why we are starting this series dealing with "getting more go." It is intended to be a guide and constant source of information for the *average car enthusiast* who wants adequate acceleration for safe passing, higher cruising speed, or more power to haul a trailer. It is not for the typical hot rodder who builds real hot machinery like dragsters and lakesters. So, in this first part of the series, we'll start with the basic principles.

ONE OF THE FIRST QUESTIONS that should be discussed is: What are the limitations that govern the horsepower output of any engine design? The answer is the design itself. Any engine can be modified to produce more power than that at which it will operate. In other words, it's no trick for an engineer to make any engine produce enough power to blow itself apart. But, a powerplant has to be considered as a working unit, and *working* is the key word.

Any change incorporated into a working design has ramifications that extend throughout every part. For this reason, the engine has to be considered as a whole.

Engine output is evaluated by two factors—power and torque. These are related, but are by no means synonymous. Torque is the actual twist exerted upon the flywheel. It is expressed in pounds-feet, or the pounds of push that are being exerted at a distance of one foot from center. Sort of a torque wrench in reverse. But this is not work; it is merely push, or pressure exerted.

As soon as this force pushes against something that *moves*, work is being done. Now, we are not primarily interested in the pounds-feet torque rating. We are concerned with the work being done in a given period of *time*. This is power. The measurement is the horsepower unit. If the engine moves 550 pounds one foot in one second (or one pound 550 feet, or any combination of these multiples), it is operating at one horsepower output.

Lots of horsepower is what gets you off briskly from a traffic signal, or up a hill in a hurry, or back into your own lane, so you don't meet that oncoming car as you try to get by that slow-moving truck.

AN ENGINE IS BASICALLY A HEAT MACHINE. It takes gasoline, mixes it with air, and ignites it in the combustion chambers of the engine. It's really not too efficient, either, since in the best gasoline burner more than a third of the fuel energy (expressed as British thermal units, or BTU) is dissipated as heat through the cooling water; another third-plus goes out the tailpipe as hot exhaust; and only the remainder does any work.

A gasoline engine produces power by taking air through a carburetor, where it picks up a fuel charge. The mixture is then ducted through passages into the combustion chambers, where it is ignited by the spark plugs.

After ignition (burning), the temperature of the mixture goes up, creating a pressure increase within the combustion chamber. This pressure is exerted uniformly against the walls. The lower portion of the chamber is, of course, the crown of the piston, which is forced downward by the pressure of the expanding gases. The piston is connected to the crankshaft by a connecting rod, and the motion of the piston forces the shaft to turn in a rotary motion.

The higher the pressure exerted against the crown of the piston, the harder the piston pushes against the shaft. Thus, the engine either turns faster (acceleration) or exerts more push at lower speed (climbing a hill).

The ultimate power source is this cylinder pressure. To make an engine produce more power and do more work, more fuel/air must be introduced into the combustion chamber. (The fuel/air ratio is nearly constant.) The more mixture introduced, the more power the engine produces. Thus, for higher power output at full throttle, this cylinder pressure must (1) be increased (higher volumetric efficiency), (2) be exerted against more square inches of piston crown (bore the cylinder out and use bigger-diameter pistons), (3) be exerted against the piston crown for a longer period of time (stroking, or increasing the piston travel), or (4) be applied at a higher frequency rate (turning the engine at higher rpm increases the number of power impulses the piston gets each minute). And, of course, there are combinations of all four.

It can be summed up simply: Any increase in power has to be oriented toward burning *more* fuel weight in the same period of time, or the same weight in *less* time. You have to burn more fuel.

Now that we've touched around the edges, how does a guy actually go about modifying?

MODIFICATIONS FALL INTO THREE CATEGORIES. The first is *bolt-on accessories*, such as superchargers, headers, lightweight flywheels, multi-carburetion manifolding, fuel injection kits, etc. These are things that cost to buy, but there is no labor involved. They can, generally, be installed under the carport on a Saturday morning. And again, generally, you will get a pretty good power return immediately. Some imports are a natural for this, too, like the supercharged VW.

This type of accessory can be installed without actually altering the engine. As a result, this Saturday you can add a supercharger and next week a header system. It isn't a package. It can be done a piece at a time with no one item dependent on the one before it.

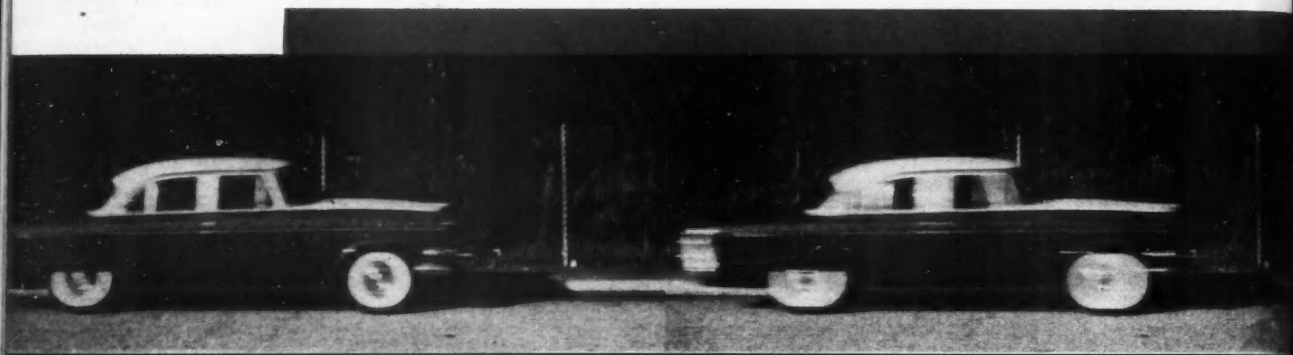
The second type of modifying can be called *pure modification*, which means actually changing the design of engine components. This gets into cam grinds, roller tappets, balancing, and other phases that increase the engine's ability to breathe and turn faster. This kind of modification is more highly specialized, and generally is done with a specific goal in mind, since it tends to change the characteristics of the engine.

The third type of modification—if your funds are unlimited—is a *combination of the first two*. It can be expensive. And it can be a *real* project if your engine doesn't have the potential. Here's what we mean by that.

NO AMERICAN AUTOMOBILE ENGINE and very few foreign engines are designed for one or two model years. When a new design is placed in production by a manufacturer, he has to get at least five and sometimes as many as 15 years out of it. A new engine design costs him a lot of money. He manages this by purposely de-rating the engine at the beginning. Each

GETTING MORE

GO



year, detail modifications are made *at the factory* to add another 10 or 20 horses with the same basic design. Year after year, the engine is brought along until it reaches its economic maximum. By this time, if the manufacturer planned properly, a new engine design is ready for production. And it has a higher horsepower potential for the same routine to begin again.

Two deductions: If your engine is of an older design, you're going to have to work hard and put out money to bring it to the point where you would start with a new engine. Be prepared for this. But on the other hand, whatever you do, even if it's a simple bolt-on, you'll feel the difference. These engines are very receptive.

Secondly, if your engine is late model, be prepared to do a lot, or spend a lot, to get a little. The design has been pretty well brought along by the factory engineers.

Bear in mind what's been going on in Detroit for the past few years. That "horsepower race" isn't just talk.

First, Detroit has done most of the modification for you. It used to be that by spending a few dollars and a few days you could double the output of the engine as it left the showroom. The flathead Ford was a natural.

The high-compression heads, multiple carburetion manifold and hot ignition systems gave a pretty high horsepower return per dollar invested, too. The reason was that the hottest engine you could buy in reality really wasn't too hot. Times have changed.

Today, fuel injection, twin four-barrel carburetors and cam grinds that a few years ago were pure competition items are *standard* equipment. All you have to do is ask for them. Some you get even if you don't ask, such as compression ratios in the order of 10 to 1.

KEEP THIS IN MIND: If you're going to start with a new car, select the engine options carefully before you sign on the dotted line, whether you order the home-bred product or the import.

Start with the biggest (largest displacement) engine you can get. Briggs Cunningham once said the only thing that beats cubic inches is rectangular dollars, and no one has yet proved him wrong.

With your big engine take every power-producing option that is offered. It may boost the initial price, but it's a lot cheaper

er than paying a premium for small-production items later. Besides, you'll have a set of matched components. This "package" aspect is one that cannot be overemphasized.

If you're not starting with a new car, best bet is an early version of an engine that powers a '59 machine. The factory has done your research for you, and many of the detail change components can be bought at friendly prices from the local dealer. You'll get a pretty high power return per dollar.

But wait. If you're starting to get up to look at the engine, preparing a list of what you'll need, stop and think. You don't get power free. It costs. And, most important, are you willing to accept the set of disadvantages that go hand-in-hand with the big "go" factor?


MODIFYING AN ENGINE is highly specialized work. It requires facilities that you probably will not have at your disposal. You have to pay a specialist for his labors, at a rate somewhere between \$4.50 and \$6 per hour. That is, after you find a man who is capable of doing it, and is willing to tackle your job. If you're thinking of letting an amateur do it because he works cheap, *don't*. This is the most expensive approach.

But assuming your engine has been modified properly, you're still not ready to put your checkbook away. Your engine is now a big, powerful one that works hard for you. You've got to feed it proportionately. But, you ask, how can an engine that is more efficient burn more fuel? Shouldn't it burn less?

Yes, and then again no. Your engine is more efficient, and each horsepower's worth of work that you get from it *is* costing you less. That is, less *per horsepower*. If you drove exactly the same way, your fuel bill would be smaller. But the idea behind the whole thing was to get a lot more horses. The greater number that you have to feed when you stand on the throttle more than offsets the savings per unit. Better figure on at least a 10 per cent increase in fuel consumption. And figure that on the basis of premium fuel. Most likely your modified engine will not tolerate low-octane fuel.

In addition to the initial cost and higher fuel costs, there is also the element of reliability. The big American engine is a paragon in this respect. All you have to do is change the oil occasionally and add gasoline. Have it tuned up for about \$10 whenever it gets too hard to start or it just won't keep up with the traffic.

Tired of poking while others pass? More "go" for little "dough" can be yours.



A regular stock engine will fire up easily whether you live in Nome or Death Valley. It will idle for hours, then poke along stop-and-go mile after mile without protest. It will carry 10 people and 20 suitcases along a highway at 70 mph without overload. And, unless it is abused by an expert, it will run for 100,000 miles, depending on the degree of inefficiency you can tolerate. How much of this reliability are you prepared to sacrifice?

THE MODIFIED ENGINE—if you go too far, even with bolt-ons—is not as reliable and not as flexible. The increased power will probably be brought in at a limited speed range. Generally, you have taken it away from the low-speed range. You have to give the engine specialized treatment in direct proportion to how highly you are modified. Small modification, little special treatment; big modification, be careful. You can get flashing performance, but you can also end up owning a dragster.

If you went "all out" with your modifications, you'll find the engine won't start quite as easily. You'll want to warm it up slowly, because now you are wearing out highly-priced parts, not everyday \$2 parts. If you keep it in top tune, you may get it to idle at 1000 rpm, nearly twice its normal speed, and you can't keep it idling long. Stop-and-go will arouse all kinds of protest. You've got a complex machine that likes to go fast and requires a fine tune. It will let you know when it's slightly off "top." Tune-ups become more frequent and a lot more expensive. You can't make a set of plugs "do" any more.

With this sensitivity also comes higher wear rates. The engine won't last as long. The reason the unmodified engine was so reliable was that the factory built a big safety overload factor into it. You can cut this safety factor down to a fine edge. Every part is then under just a little more pressure and subjected to just a little more strain, which makes it wear out just a little faster.

Look at it this way: Ten dollars will last you 10 days if you spend a dollar a day, but only five days if you double the spending.

An engine is much the same. It is a machine capable of producing only so many units of power before it has to be replenished. It also has a rate of work that will give you a few

extra—kind of a bonus for taking it easy. The units that the engine produces are called horsepower hours.

Let's go back to the \$10. If you modify your engine, chances are you're going to use the new-found power. It's only natural; besides, that's the idea behind the whole thing. This is equivalent to spending the \$2 a day. Depending on how drastically you modify, and how heavy your foot gets, your wear rates will be proportionate.

ARE YOU CONFUSED AT THIS POINT? You should be. First we led you to believe that modification is *the* thing to do; now we have outlined the evil things that will befall if you don't leave that engine alone. What's the right answer?

Take it easy. Think about just how far you are going to carry the modification before you loosen the first bolt. Set it up to meet your specific driving needs. Is it worth it to have a 125-mph engine when five days a week you sit in traffic on your way to work?

Modifying your engine is only one part of the whole picture. You've still got to get the power to the road. Your automatic transmission may not handle the power, or you may need a heavy-duty clutch to get the new power to the differential, which itself may require different gear ratios. You may need a set of radius rods to keep the springs from winding up under fierce acceleration, only to find out that your old tires do not have enough adhesion to bite the road. Then, as you cruise a bit faster, you'll have to consider special no-fade brakes; and the handling characteristics of the car may not be satisfactory for high speed. Now it *really* starts to get complex.

But if you look before you leap, you can safely take a lot more power from your present engine. You can set it up to do exactly what you want.

Next month we'll start to go into the specifics—exactly what is involved in each stage within the overall modification.

In the second article of this series, we'll discuss one of the simplest, least expensive and most effective power modifications: the exhaust system. "Back pressure"—what it is, what it does, and how to minimize it. We'll talk about headers, mufflers, tail pipes, etc. Don't miss it . . .

Mr. Eliminator

"'Ole Blue' went to the 1958 National Championship Drag Races as a spare car with no hope of winning . . . but before the meet was over I was begging just one more run . . . then one more . . ."

by Ted Cyr

as told to George Hill

EARLY THURSDAY MORNING, AUGUST 28, 1958, we pulled into the inspection line at the fairgrounds in Oklahoma City. My partner, Bill Hopper, towed our year-old dragster, "Ole Blue," behind his pickup; I was driving a borrowed panel truck with a brand-new Chassis Research dragster trailered behind. Thus we caravanned from Escondido, Calif. with hopes of winning the championship at the National Hot Rod Association's Annual National Championship Drags.

We went to win but while waiting all day for our turn with the safety inspectors I could not overlook the enthusiasm and determination of more than 100 other teams who were also there to win. The fastest cars in the country, many of them champions in their own regions, were in line. Each expected to take home the championship. The competition was the best this country had to offer.

Ole Blue, as we had affectionately named our unblown Chrysler-powered machine, had proven itself successful in West Coast competition. Every weekend saw it carrying me to new victories over some of the latest designs but the wins in recent weeks had been by some very narrow margins. I actually felt that it might be lacking in the explosive power and speed that would be needed to win the Nationals. And that was the reason for bringing two cars to the meet.

Our new machine, not yet thoroughly tested, was the car that we felt had the best chance of coming out on top. It was a new chassis with a supercharged 392-cubic-inch Chrysler engine. We painted this car a bright orange so that it would contrast with Ole Blue. To insure the new car's success we had loaded our trucks with special replacement parts for it. We even carried a spare engine, a 450-cubic-inch Chrysler with a 4-71 GMC blower. The crankshaft for this extra engine had not been delivered when we left California but we had been promised delivery to Oklahoma by air mail. The rest of the parts were boxed in the back of the trucks. Test runs in this car, with the 392-inch engine, had all been close to 150 mph and the elapsed times had been just under 10 seconds.

My greatest problem had been in getting used to driving both cars on the same day. Ole Blue was a two-speed car, necessitating a shift from second to high during the course of each run; the orange car ran high-gear only. I had made so many runs in Ole Blue that getting it through the traps was almost second nature. While driving the orange car I had to remember that the blower and high-gear-only combination required higher revs at the starting line and a more sensitive throttle foot to get maximum acceleration without creating undue wheelspin. Having two cars in the event might have been considered by some as an advantage, but it did have its drawbacks.

Around 5:30 P.M. we inched up to the head of the inspection line, unloaded both cars and began the process of having them inspected for safety regulations and classification. Both cars received registration certificates and we then pushed them into the large barn that served as night pits. When we hit the sack it was for the last full night's sleep we were to get for four days.

Friday morning we arrived early at the strip, warmed up both cars and put them in line. When I looked around at the lines of top dragsters I thought that whoever it was that won out in the end would know he had been in a battle. When it was our turn on the line I fired up Ole Blue, got the flag from the starter, and reflex action took over. The car broke away from the starting line with a minimum of slippage. About 120 feet out a quick shift into high and then full throttle. Pressed to the back of the

continued on page 76

"The starter's flag went into the air and Ole Blue shot off the line. This time Cheatham had his foot too far in the throttle and he made a ragged start, with smoke pouring from his rear tires. It was just the break we needed to win . . ."

Illustrated by Carlo Demand





"It is known that several new models exist in the Research Dept. of VW..." Will they meet the threat of American small cars with one of these three possibilities as their

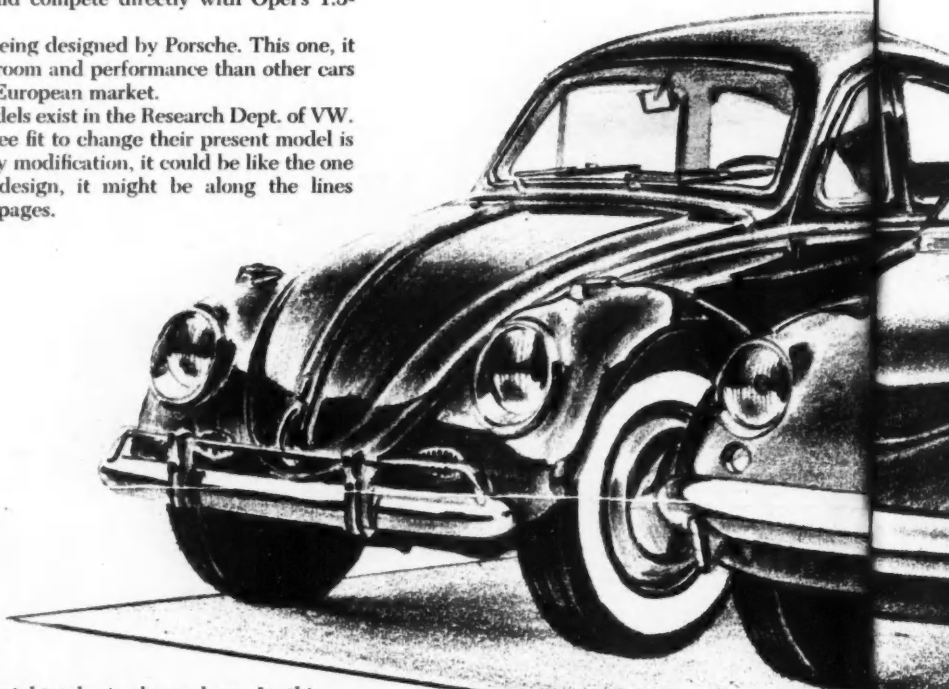
ALL-NEW/VW

RUMORS ABOUT AN ALL-NEW VOLKSWAGEN have been raging for months. The "experts" said that a 1400-1600cc VW with Porsche-like body for four passengers would be announced this spring. What apparently happened, however, is that VW made an agreement with Opel not to produce this car because it would compete directly with Opel's 1.5-liter car.

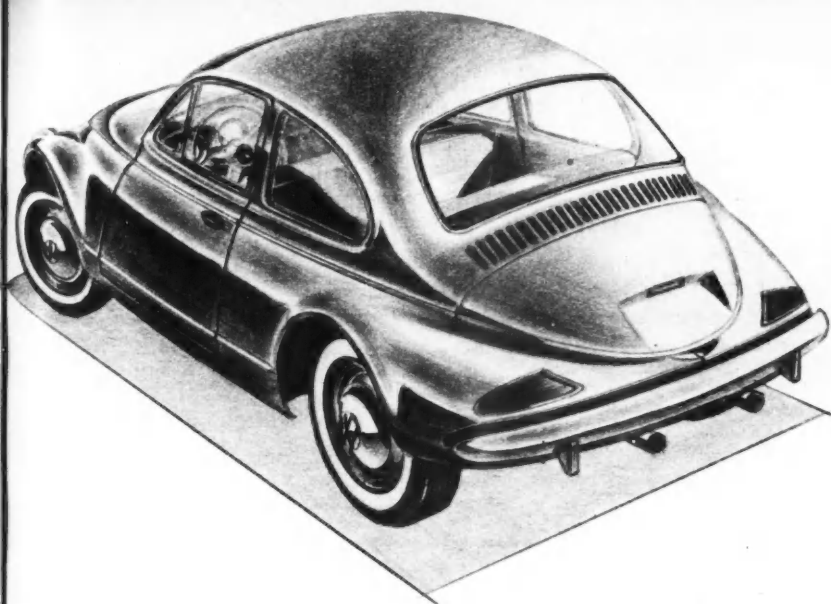
Then there's the smaller VW being designed by Porsche. This one, it seems, is a 600cc job with more room and performance than other cars in this near-minicar field for the European market.

It's known that several new models exist in the Research Dept. of VW. Whether or not the factory will see fit to change their present model is a debatable point at best. If it's by modification, it could be like the one drawn here. If by complete redesign, it might be along the lines of those shown on the following pages.

by Günther Molter



One approach that Volkswagen might take is shown here. In this conception, artist Del Coates has retained the basic lines and made modifications that would be relatively inexpensive. The trunk lid and engine compartment hood (see top drawing) are made from the same die. Other changes add more visibility, more width and length.



WOLKSWAGEN?





Dr. Heinz Nordhoff, Director of the VW factory, knows that many people would like a new, larger VW with greater visibility, more luggage space and better performance. Yet, as far as changing the design is concerned, Nordhoff says this:

"It is much more important to me to give people a good value, instead of following the ideas of a group of hysterical stylists . . . We will improve detail, but not change the entire car . . . The VW is not only a question of body, but a whole design . . ."

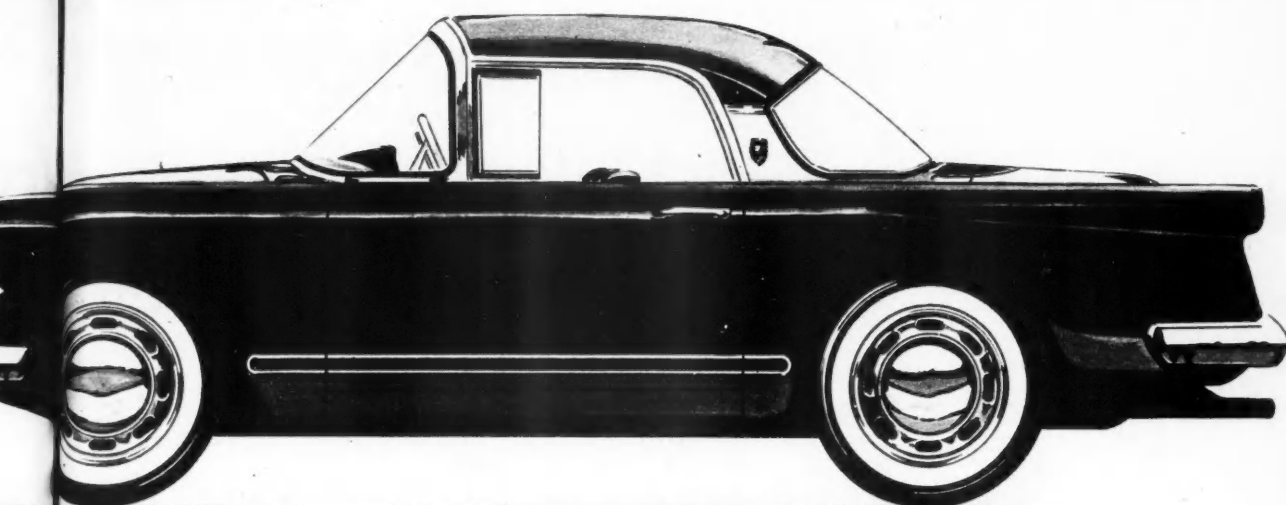
**What Dr. Heinz Nordhoff
says about the ALL-NEW**

VOLKSWAGEN

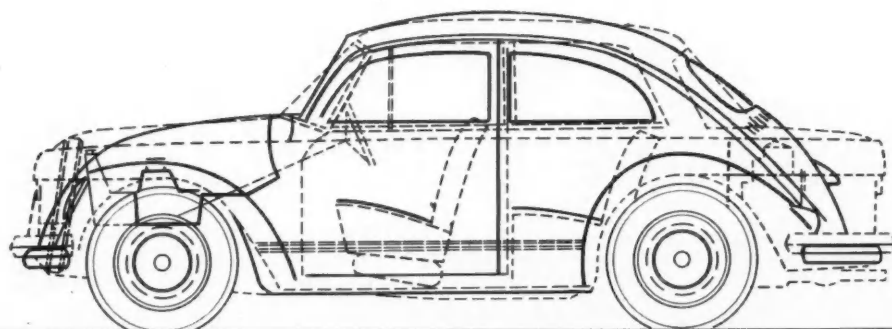


German stylist van Husen's re-designed VW is a radical departure, yet it retains the VW flavor and considerably updates car.

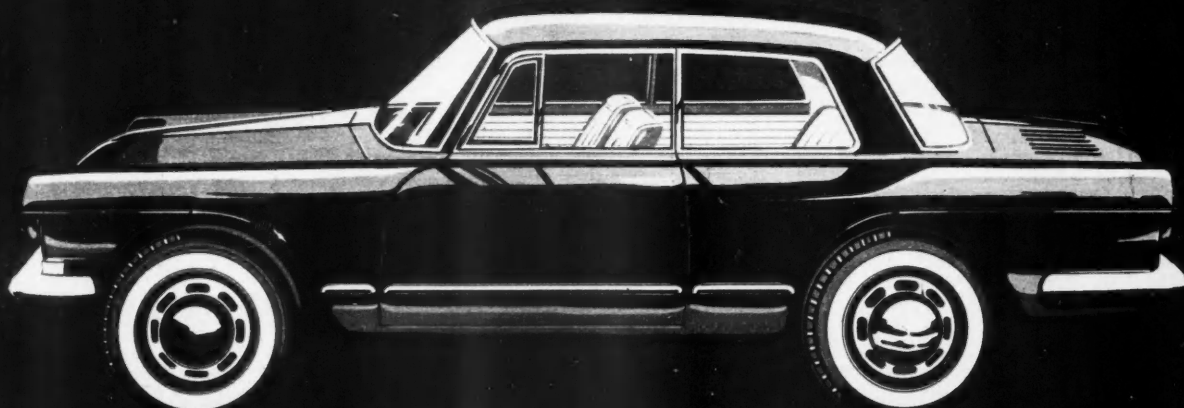




A version of the Karmann-Ghia based on Hans Muth-designed VW shown below.



Dotted lines show Muth's new VW design in relation to old VW (shown by solid lines). Wheelbase, headroom, etc. remain the same; the length is increased.



Hans Muth, a 24-year-old German body designer, believes the new VW could follow the design he has shown here. He has kept cost and the ease of production foremost.

FERRARI'S FIFTY-NINE FAMILY

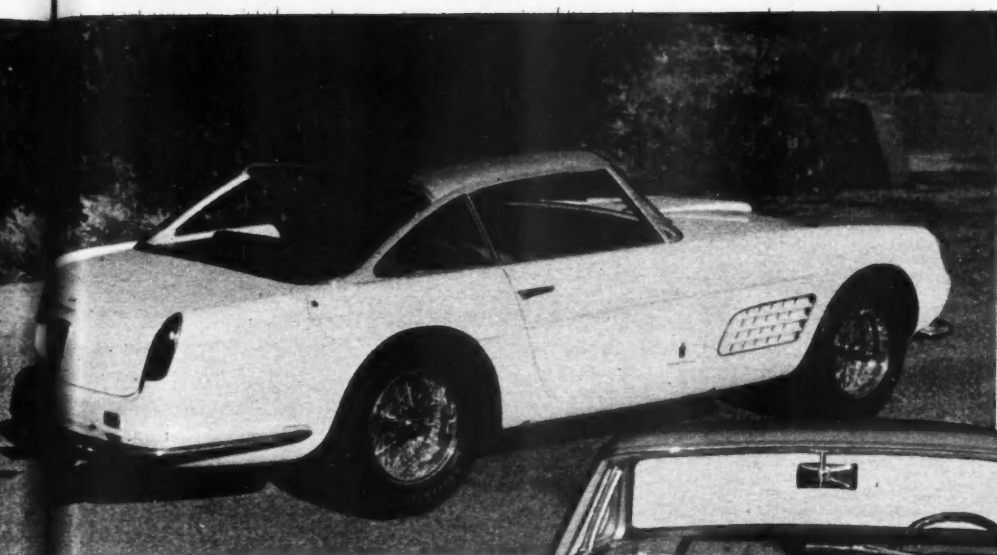
If you stand in line with 259 other people this year, and have upwards of \$12,000, one of these can be yours. You lucky dog!



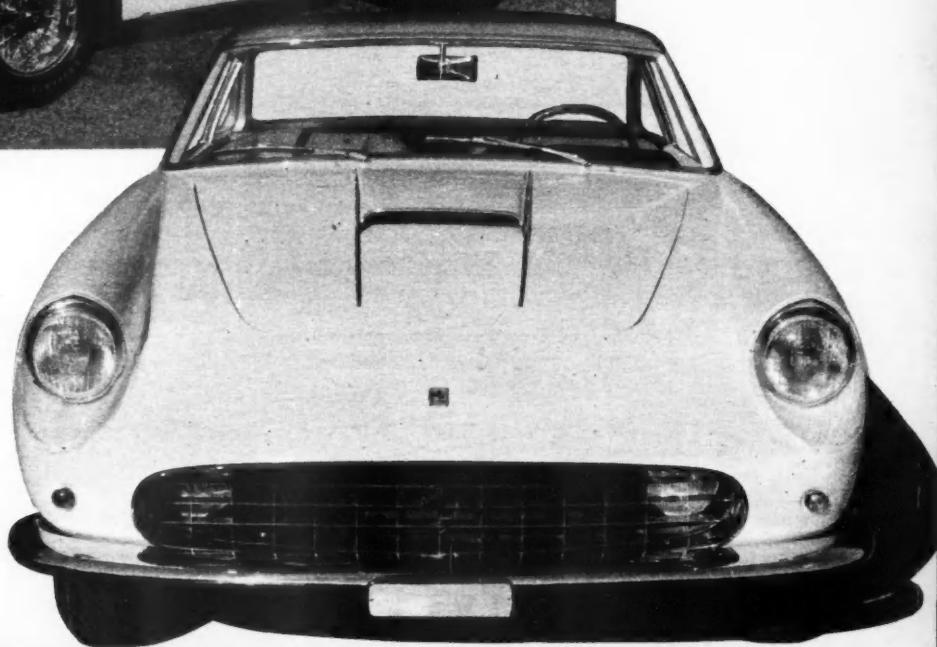
Ferrari's factory is located at Maranello, where present production is about 260 cars per year. This year all cars will be fitted with Dunlop tires and Dunlop disc brakes. At front sits \$14,900 Farina convertible with 3-liter engine.



The \$12,600 250-GT with Farina body has assumed an industrial character with the production of one car a day. In view of increasing demands for cars, especially in the U.S., three American experts are helping Ferrari speed up production.



If '59 is your year to go fast, try the 410 SuperAmerica Farina coupe. Its clean elegant lines are handsome either front or rear. The \$18,500 buys a V-12 displacing 4963cc, with output of 400 hp at 6500 rpm. Depending upon axle ratio (8 are offered), top speed is from 112 mph to 165 mph at 6500 rpm.



Fitted with the newest Scaglietti body, the California convertible retails in this country for \$12,000. The V-12 displaces 2953cc and develops 260 hp at 7000 rpm. Five available rear axle ratios (all limited-slip) produce from 126 mph to 157 mph top speeds.



The 250 GT Berlinetta sells for \$12,400. Equipped with engine identical to California (left), 2.35-in. stroke and 2.9-in. bore present .81:1 ratio, very favorable for enjoying benefits of overhead cams.

Are RUSSIAN Cars as good as their ROCKETS?



IT'S UNLIKELY THAT DETROIT has lost any sleep over the above question, but in any event, the answer is an emphatic "NO!" If, however, Russia pours its resources (both research and production) into the development of new cars (as they have with Sputniks), the answer could just as quickly reverse itself.

As things now stand, the Moskvitch and Volga (two of several models currently available for purchase on the world market) are no better than the worst cars I've ever driven. They have their good points — but they're nothing to shout about. Even the price at which Abbey Rents' President Stanley Slotkin got the two cars for a March of Dimes program is hardly justification for their poor performance and quality. (Slotkin bought the two cars from a Czech firm, had them crated in Vienna, trucked to Hamburg, and shipped to Los Angeles for a total cost of \$1215 and \$1741 for the Moskvitch and Volga, respectively.)

Apparently whoever designed these Russian cars believed that if you want to make something strong, you should make it heavy. This results in some amazing inelegancies — like a glove compartment hinge heavy enough to swing a gate. The weight doesn't help the ruggedness much; after a few hours of driving the cars were already beginning to rattle and squeak. Still, they seem at their best in back country, being very uncomfortable to drive and ride in over normal roads.

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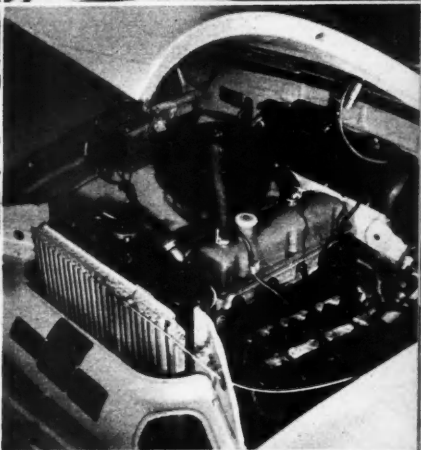
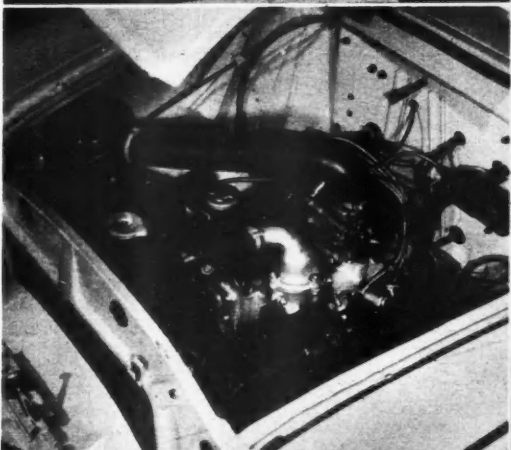


ВОЛГА

Moskvitch (meaning "son of Moscow") has small wheel and more interior room than Volga (shown in four photos at far right). Good feature is fully reclining front seats, though it would take a mattress to make them into a comfortable bed. Speedometer of Volga is reminiscent of '54 Fords. Both cars steer and ride like trucks — and not comfortable ones at that. Plastic is used to a great degree on the panel. Both have three-speed, column gearshifts.



Engines of both cars are conventional — and outdated. Moskvitch has an L-head four of 35 hp; Volga has an ohv four of 80 hp. Neither is powerful enough to cope with the respective weights of 2156 and 3212 pounds. Performance is well under most imports in their 93- and 106-inch-wheelbase classes. Top speeds are about 65 and 82 mph.



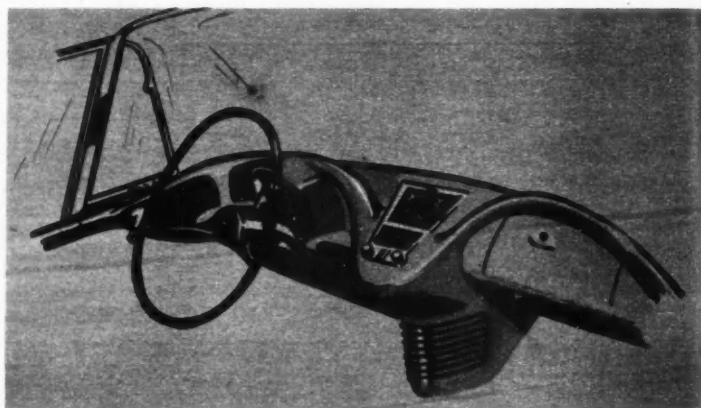
Each car has a great number of tools, including a jack, crank, tire pump, grease gun, trouble light, wrenches for adjusting and tightening everything from the brakes to the steering arm — everything in fact that anyone would need to repair them on the road. The manual is as complete as any to come out of Europe. Trunk is adequate.



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1 You can submit your own original automotive design sketch or detail drawing—for a complete car or for one or more components. Examples of entries for this category are a dash concept by Paul E. Butler (right), and a design for a small-car two-door sedan by John Tjaarda (far right).



2 You can submit an original model car (example at far right), or a model built from any Revell (or other make) customizing kit. These contain a number of accessory items, allowing you to individualize your own customized model. At right is a Revell customized Chrysler model.



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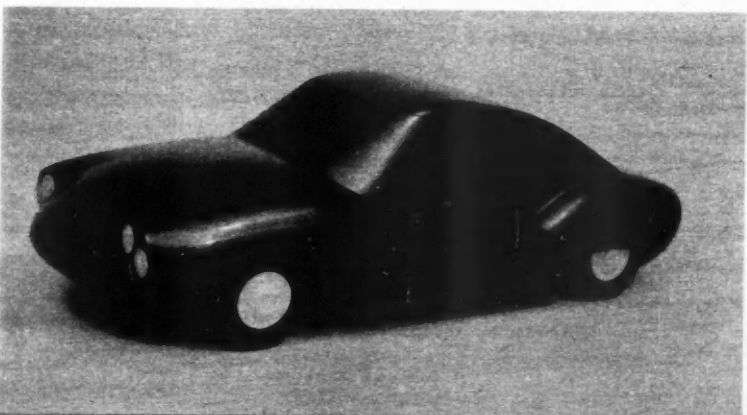
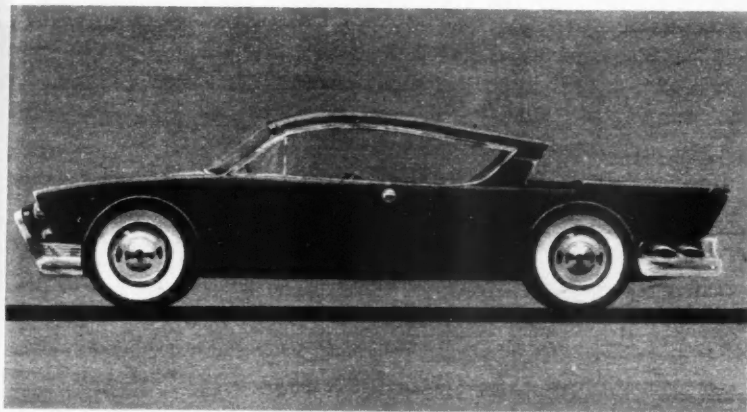
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Prizes will be jointly awarded by Revell, Inc. and Motor Trend.*

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MT PROJECT IDEAS

3 You can submit photographs of an actual full-sized car that you have designed or customized. This can be an entire car, or just part of one. On the following pages are three examples of customized cars which could be entered in this category.

For your Contest Entry Blank, Official Rules, or more detailed information, send a card with your name and address to:

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P.O. Box 212, Venice, California

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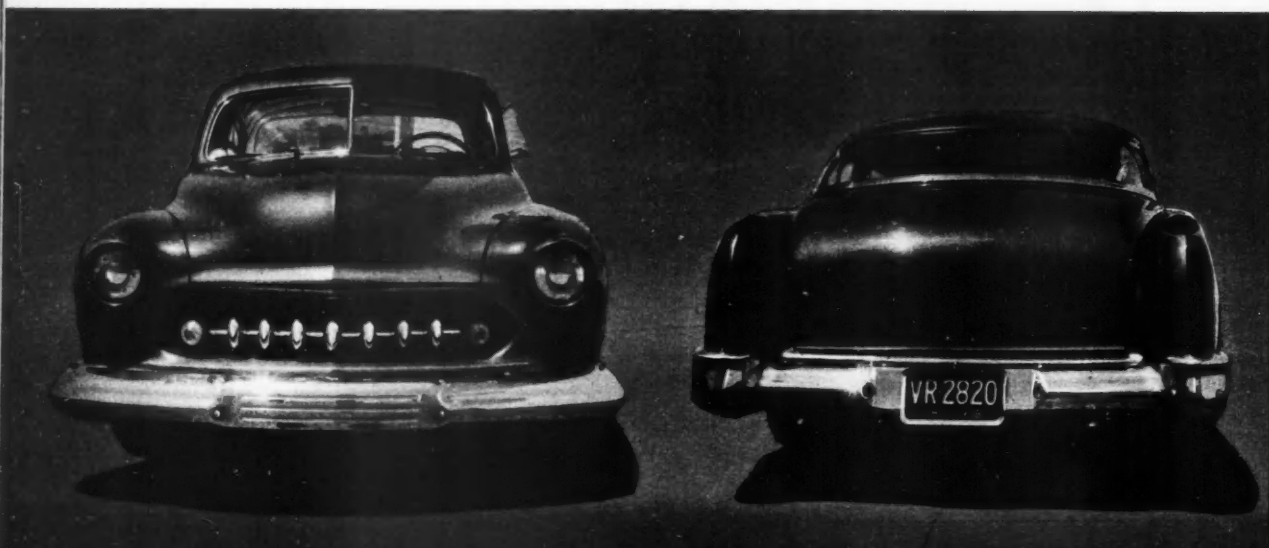


Skillfully worked hood has frenched horizontal scoop, plus 4 scoops from '54 Buick, grille elements from '57 Chevy.

Dechromed deck is flanked by '56 DeSoto tail light lenses fitted into stock Chevy shell. Gas neck was relocated in trunk.

A four-carb '56 Buick engine in a '51 Merc gives Jack Norris of Mansfield, Ohio a "goin' custom."

Bronze BOMBSHELL



Starting with a "total," Kenny Woods of Charleston, W. Va., used his body shop knowledge - and \$850 - to customize this '56 Chevy.



Sporting side trim from '58 Fairlane 500, car is finished in purple metallic lacquer, with white and gray naugahyde

interior. Lowering was done by re-spacing front springs and de-arching rear. Bumpers are stock, hubcaps from '53 Cad.

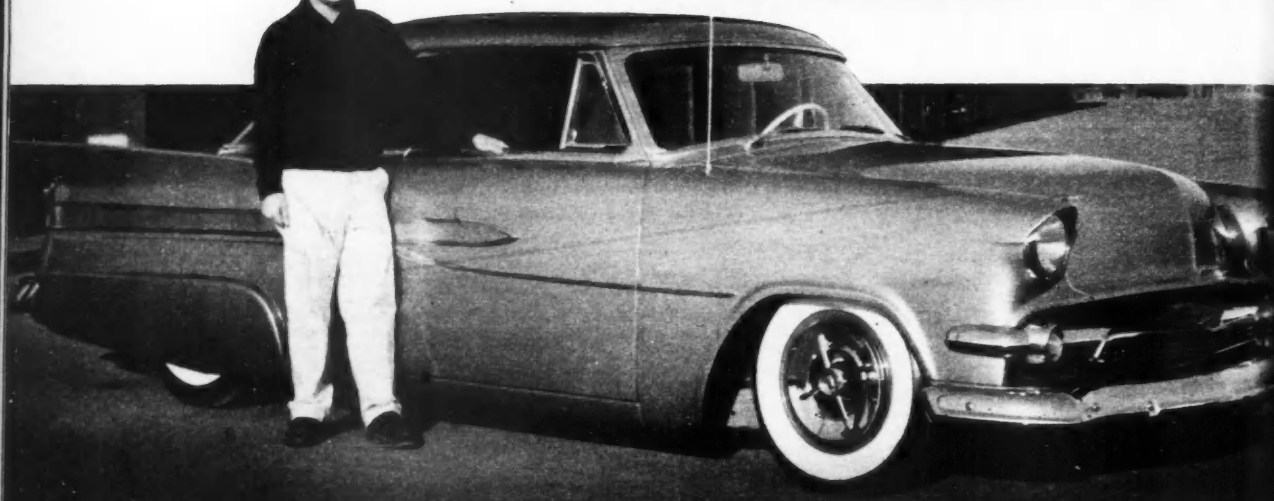
A LABOR OF LOVE for three years, Jack Norris's golden-bronzed '51 Merc club coupe combines an engine swap with a number of tastefully executed customizing touches. The '56 Buick V8, augmented by Mallory ignition and four 97 Ford carburetors, provides a potent powerplant for this gilded chariot. Dropped three inches front and rear, the lowered look is complemented by the side trim of a '56 Chevy spear and the rear fender chrome from a '55 Merc wagon. The spoke wheels, machined to fit, are of the Dayton knock-

off type. Tail lights from a '57 Corvette are frenched and formed to blend with fender contours. The floating-type grille has a '54 DeSoto bar with '51 Kaiser parking lights; background mesh is from '58 Ford. The entire grille shell unit has been frenched into the hood, fenders and gravel shield. '53 Merc headlight rings and nosed hood complete the front treatment. Other finishing touches include tan and white naugahyde upholstered interior and trunk, and pushbutton-operated doors and deck lid.

PHOTO STORIES BY GEORGE BARRIS



FINNED '54



It took one year for Gary Steinmetz to transform his '54 Ford Victoria into this finned beauty. Front wheel wells have been cut back 3 inches.



Stock dual exhausts, installed with fiberglass, are canted off top of stock fenders, contain '59 Olds 98 tail lights. Round rod has been frenched in around hinged license plate, which hides gas filler pipe. Trunk lid, along with doors, is electrically operated. Curved-tip dual exhausts protrude from beneath stock bumper. Color is Eldorado green.

Photo

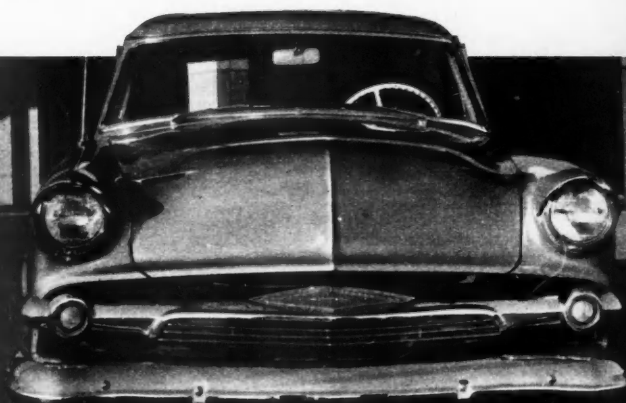
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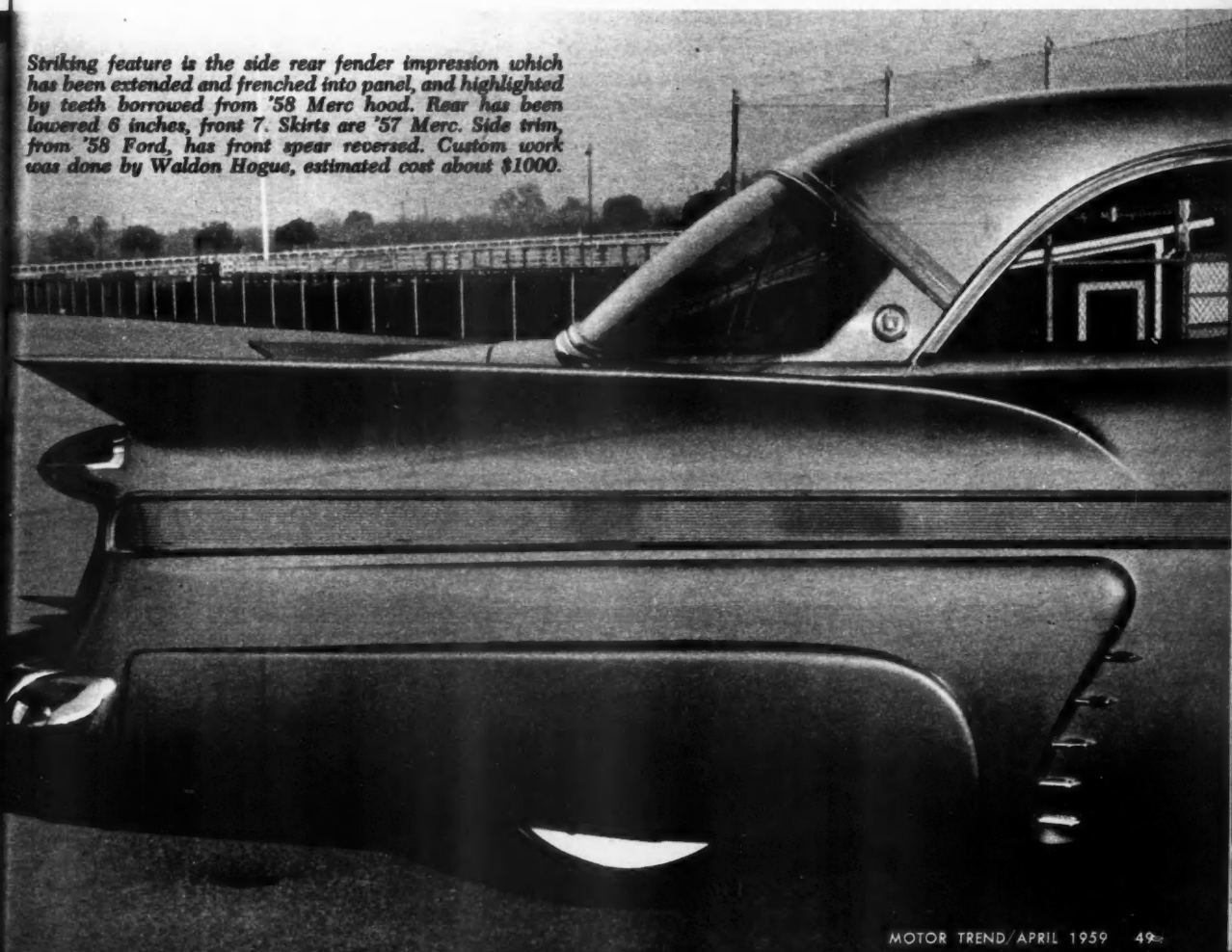
Photo Story by George Barris

"I always wanted a good-looking custom," says Gary Steinmetz of Gilroy, Calif. And here's how he got his wish — with tasteful design and "borrowed" parts.



Stock grille has diamond slit in middle filled with mesh. Hood is nosed, with peak. Twin scoops are inboard of '55 Chevy lights.

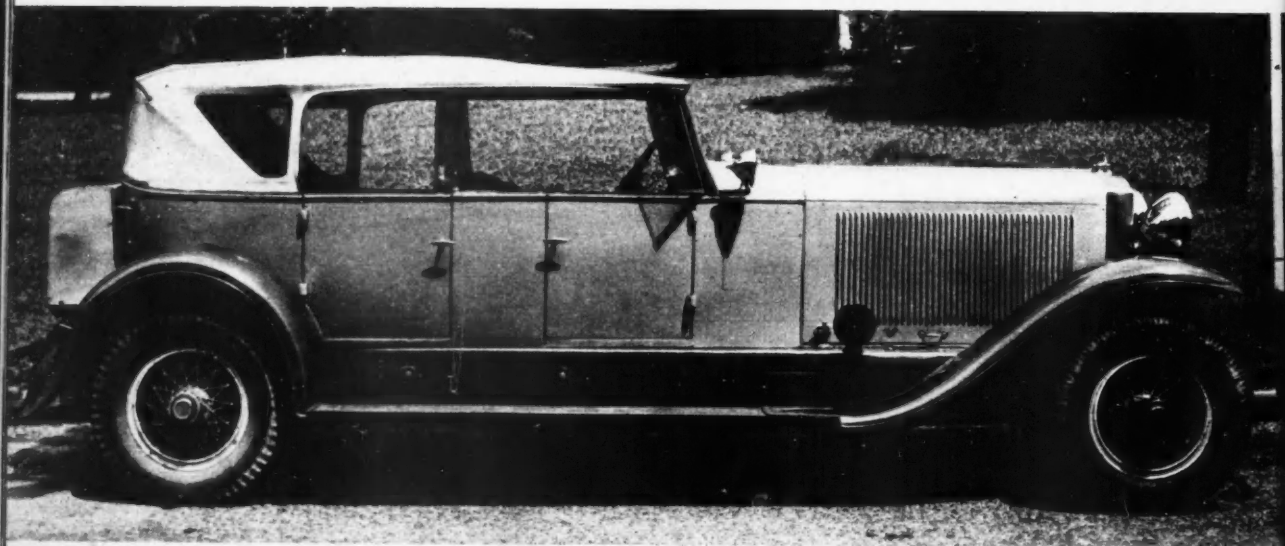
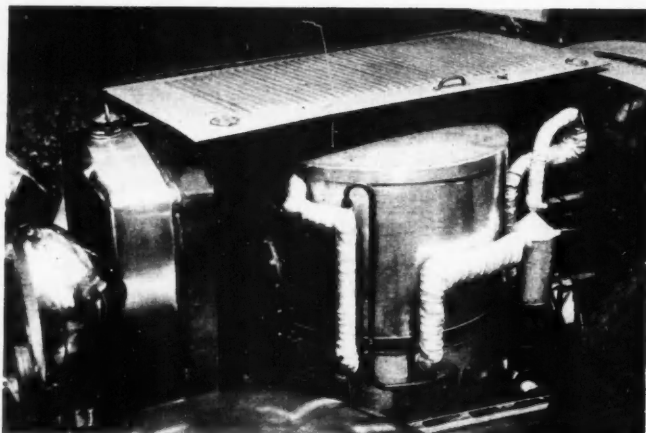
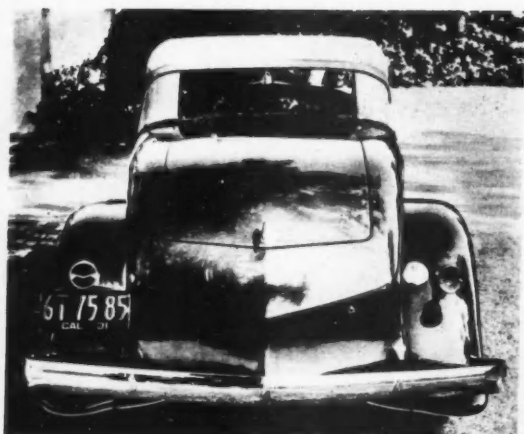
Striking feature is the side rear fender impression which has been extended and frenched into panel, and highlighted by teeth borrowed from '58 Merc hood. Rear has been lowered 6 inches, front 7. Skirts are '57 Merc. Side trim, from '58 Ford, has front spear reversed. Custom work was done by Waldon Hogue, estimated cost about \$1000.





DOBLE STEAMER

*Photo Story by
Smith Hempstone Oliver*



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Squat soft-top and sloping fenders add to long-low lines of Doble roadster.

Trim, tapered rear end of roadster hides engine mounted in unit with the rear axle. The flash boiler under the hood can generate operating steam pressure in less than two minutes, maintain it at 1100 lbs. per square inch.

IF ALL THE SMOG TALK (once confined only to Los Angeles residents and comedians) continues, we are bound to see a resurgence of all the "other types" of cars—mainly electric and steam. And of all the makes of steam cars, the one in our estimation that could best stage a comeback is the Doble.

The two Doble steam cars on the opposite page are probably the finest extant examples of the Doble: the Touring Car E-23, and Roadster. The E-23 is mounted on a sturdy frame of 153.5 inches, with four semi-elliptic springs, four-wheel brakes, and is fitted with a five-passenger touring body believed to have been built by Murphy of Pasadena, Calif.

As with most steam cars, the engine is not under the hood. Instead it is mounted in unit with the rear axle. As a four-cylinder, cross-compound, double-acting engine, its function was such that every stroke was a power stroke. Its "fuel" was the steam furnished to it from the boiler under the hood, on demand from the driver's foot throttle. The steam condenser (the "radiator") and 17-gallon water tank provided a water supply sufficient for a 500-3000-mile cruising range.

The top speed of the E-23, always a popular subject, is not generally known, but it has been driven at a constant speed of over 70 mph for several miles beside the tracks of the New York Central System in order to surprise the engineer of a steam locomotive with a little steam whistle tooting of its own. The response was as expected. Fuel mileage averages about 10 per gallon, not bad considering the size and weight of the vehicle.

Smoothness and quietness of operation, as well as slowness of running when desired, are things that always create comment on the part of the occupants of any steam-propelled automobile; the Doble is no exception. The acceleration of a Doble from a standing start is another thing that has always been startling to the uninitiated, though admittedly these cars of over 30 years ago can no longer outperform the gas-powered cars of today. Still, a ride today in a Doble is a thing that will always amaze every true enthusiast, and provide material for interesting conversation for a long time to come.

Built in Emeryville, Calif. in 1925, five-passenger Doble Touring Car No. E-23 has 153.5-in. wheelbase, four-wheel brakes, Rudge-Whitworth wheels.

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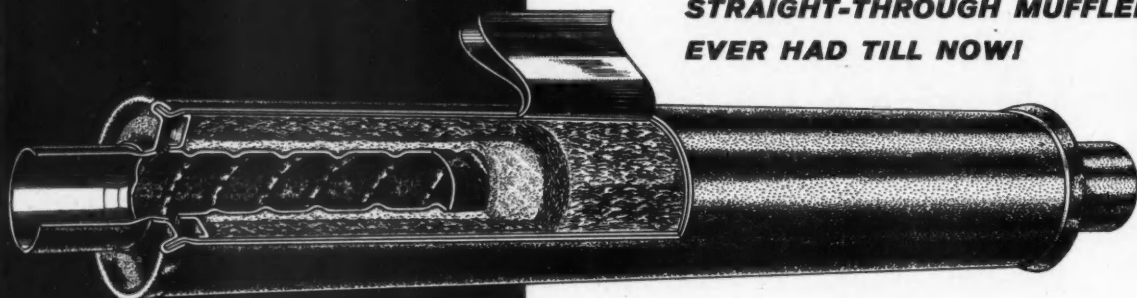
PRINT ADDRESS _____

I attach list of cars by Make, Year and Value

A COMPLETELY NEW
CONCEPT IN
MUFFLER DESIGN!

Super G

WITH FEATURES NO
STRAIGHT-THROUGH MUFFLER
EVER HAD TILL NOW!



See why there's never been a muffler like Super G!

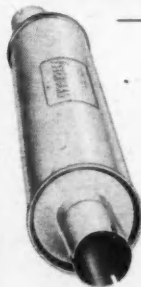
- Premium-quality construction
- Glass packed for ultra-quiet power tones
- Straight-through power
- Exclusive Spiral Core for quieter gas flow, less back pressure
- Seamless double-wrapped outer shell
- Extra-heavy outer heads, spun on under 30 tons of pressure

Looking for something really *special* in mufflers? Install a quiet-power Super G. Then get set for the most electrifying driving thrill of your life! The *exclusive* Spiral Core design of Super G gives you straight-through performance—but with a difference! Exhaust gases flow in a spiraling action-thrust to produce softer, mellower power tones and lowest possible back pressure. Just a feather touch of the throttle and your car comes alive with surging power—flattens out hills and steep grades—your engine has that sweet purr that means it's giving everything it's got. Give yourself a special driving thrill—install a Super G. It's a totally new muffler—soft-voiced master with the power of straight-through performance. Install a Super G today.

AT YOUR FAVORITE DEALER OR AUTOMOTIVE STORE

Super G MUFFLERS

DEPT. 16D, TOLEDO 1, OHIO



Dyna-Glas gives you power, economy and smooth, mellow tones—at a popular low price

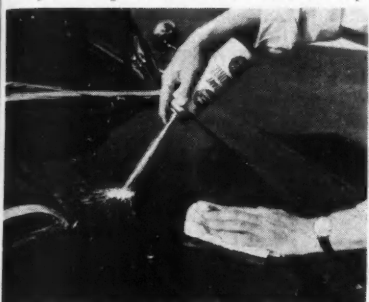
Big 2-in. straight-through tube virtually eliminates back pressure—boosts power and gas mileage, too.

Two layers of Fiberglas packing *plus* double shell construction deliver smooth tone and longer service life. If you like the sound of power, get Dyna-Glas.

MTRENDS IN NEW PRODUCTS

Information below is based on news releases from the manufacturer or distributor. Motor Trend has not tested or necessarily endorsed the products. Tested items are featured in our Product Use Tests (see next page).

INSTANT SIMONIZ (just add car) in a spray can eliminates the work and the mess from the waxing job. Just shake the can, spray a little on the car, rub it into the surface, let it dry and wipe it off. The Simoniz Co. says



that it does a real simoniz job, cleaning and waxing in one application. It is suitable for all finishes, including the new acrylics. Ask for it at your service station. Price: \$2.50 for a big can.

UNIQUE WATCH that has no hands and no dial gives you the time in hours and minutes.

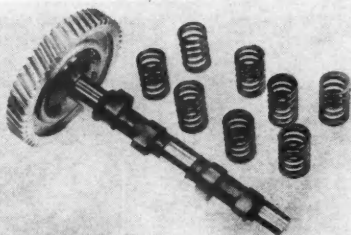


Swiss movement in shock-resistant case is guaranteed for one year. Send check or money order for \$8.95 to Cryder Sales Co., Dept. DW-201, P.O. Box 79, Whitestone 57, N.Y.

D-A SPEED-SPORT GEAR LUBE, sister product to the motor oil in the yellow can with the checkered flags, has been announced by the Racing Division, D-A Lubricant Co., 1331 W. 29th St., Indianapolis 23, Ind. Formulated and processed for high-performance operation, the following advantages are claimed: prevents metal scoring in transmissions and differentials, protects differential pinions from extreme heat and pressure, will not foam, prohibits gear train failures caused by inadequate film strength, and eliminates drag caused by oil thickening even under conditions of extreme heat. Write to D-A Lubricant Co., or inquire at any speed shop.

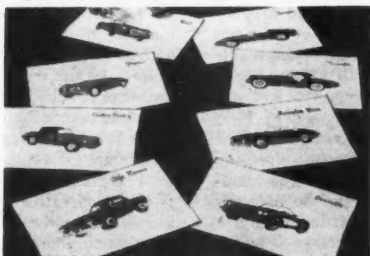
QUICK START, by doubling the voltage to the starter (which means four times the electrical energy), is attainable with a series-parallel switch manufactured by Kurland Mfg. Co., Box 8168, Chicago 80. Many automobiles, especially high-compression new engines and modified older models, suffer from hard starting under extreme heat or cold. Kurland's switch allows a second battery to be cut in for starting only, all other accessories to operate at normal voltage. An auxiliary button doubles the voltage only on demand. Can also be used as emergency measure to start stalled engines, and is a natural for engine swappers. Price for guaranteed unit: \$15.

HI-LIFT VW CAM, precision-ground from a new forging, is custom-made for both sedans and transporters. Incorporating a higher lift



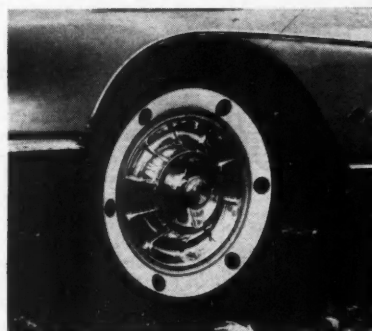
than the stock unit, the grind increases low-speed torque and power without introducing run-away idling speeds. Manufacturer's tests show a substantial power increase in the 2000-to-4500-rpm range. Also available is a full-race cam of similar quality. Both are supplemented, at no additional cost, by eight high-rate matched valve springs. If the VW has been modified, the cam kit is almost a necessity; unmodified, it's a nicety to get a little more go. For further information write European Motor Products, Inc., 1999 Roberta St., Riverside, Calif.

PORTS CAR NAPKINS are a really cute item. Hand-silkscreened in two-color on crisp white imported linen, each napkin is 7" x 10"



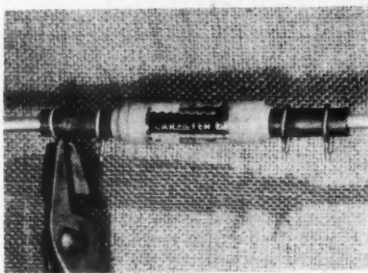
size. Price for set of eight (assorted, or eight of one) is \$8.50. Satisfaction, or money refunded. Order from The Gay Atelier, Box 232, Nutley 10, N.J.

LEOPARD-LOOK TIRES can be attained by the addition of the Dot-O-Wol kit, marketed by



Dot-O-Wol, 1126 SW Morrison, Portland, Ore. Each kit contains 30 pre-bonded rubber dots, in either white or black depending on sidewalls. Once applied, they resist severe weathering, gasoline, oil, tire cleaners and curb scuffing, according to the maker. Price is \$3.98, including postage.

DISPOSABLE FUEL FILTER, fitting into the line between the fuel pump and carburetor, has been introduced by Carter Carburetor Division, ACF Industries. The cigar-shaped filter includes a fine-texture ceramic filter, a mag-



netic trap, a clogged-filter bypass, installation instructions, and a mileage record sticker. Price is \$3.95; ask at your service station.

ISKENDERIAN CAMS need no introduction—just an announcement. First, if you want to bring in or send your cam, "Isky" will regrind it for street use. Prices depend on cam, but start at \$45. Second, if you own a Chevy—and want it to go more like a Chevy—a roller cam kit is now available. Installed in a properly-tuned Chevy and put on their dyno, it produced 1.14 hp/inch without impairing the low end. The kit consists of 16 each roller tappets, non-adjustable chrome-moly pushrods, silicon-chrome outer springs, similar inner springs, and heavy-duty spring retainers. Price for cam and roller kit complete is \$300 from Ed Iskenderian Racing Cams, 670 N. Inglewood Ave., MT-4, Inglewood 3, Calif.

HEDMAN HEADERS

Improving flow of exhaust gases increases horsepower—and gas mileage, too



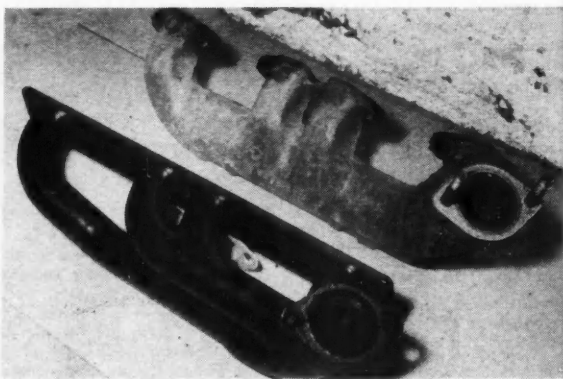
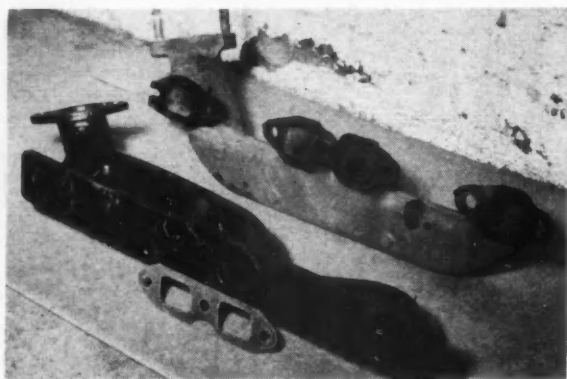
ONE OF THE FIRST THINGS that comes to mind when thinking or speaking of power- or performance-increasing accessories is carburetion, or how to burn more fuel. Before any thought is given to increasing performance by this method, let's take a good long look at how to get rid of the exhausts of the fuel we are already burning.

Any work the piston must do to force exhaust gases out the ports and through a manifold that resists or restricts the passage of such gases is just that much less work it is doing toward propelling the car. The pulses created by the rapidly occurring explosions cause the

Corvettes and the Thunderbird Ford engine. In addition, custom racing headers that require special installation and are used without mufflers are available for all model Chevrolet V8s, Corvettes, and Ford, Mercury and Thunderbird 292- and 312-cubic-inch engines.

Just to see what headers would do for any ordinary car in reasonable running condition with average point and plug condition (which is generally not what it should be), MOTOR TREND selected a '57 Ford Fairlane with Thunderbird engine. This car gets average city driving and some weekend highway use. It has 12,000 miles on it, original points and plugs, although they had been cleaned and gapped some 5000 miles ago.

On the Clayton dynamometer under the skilled hands of Les Ritchey of Performance Associates, the dials on the test panel showed



Large ports and smooth, wide radius bends of Hedman headers (units in foreground of above photos) lower resistance to flow of exhaust gases.

exhaust to travel in waves that have inertia. They want to keep moving in the direction in which they were propelled by the piston on the exhaust stroke, and any sharp corners they must negotiate or any rough surfaces that grab at them to retard their progress toward the tail pipe just increase the load on the engine. Also, the more exhaust gases that remain in the combustion chamber due to poor scavenging, the less room there is for the fresh charge of fuel.

Elimination of these sharp bends and restrictions in the exhaust manifold has been the subject of much research and development by the Hedman Muffler and Manufacturing Co. Their exhaust manifolds or headers are designed to smooth the flow of exhaust gases from the engine and thereby gain increased horsepower and gas mileage.

It is hard to believe that a simple low-cost unit that can be installed in most cases in half an hour will give such an increase over the standard factory manifold it replaces. Stock chassis limit the maximum possible with improved exhaust systems, due to the necessity of going around steering boxes and other components in the engine compartment and coupling with stock pipe and mufflers.

Performance improvement on some cars is so little it is not worth the effort. With this in mind, Hedman builds headers for stock replacement for only those cars that can accommodate an adequate system. Fortunately, these cars are the most popular makes in the V8 line: Chevy, Ford, Mercury and Plymouth, including, of course

124 rear wheel horsepower at rpms equivalent to 60 mph. There was some detonation under the hood, indicating poor plug condition. Next, some 0-60-mph acceleration times were run to the corrected speedometer (it indicated 68 at true 60 mph); we found the best of four good runs gave us an average of 11.3 seconds.

We timed John Ralf, general manager of Hedman Muffler and Manufacturing Co., as he installed a set of their stock replacement headers on the still-hot engine. Using no special tools, he completed the job in 30 minutes, including retightening after warming the engine.

Back to the dyno for another reading and a surprise, for under the same conditions the power needle now indicated 133 hp despite the same poor plug condition that the first test showed. Acceleration times brought a similar surprise, as we reduced our 0-60 times to an average of 10 seconds flat. Previous mileage checks over a 245-mile weekend trip were producing 13.1 miles per gallon. The route is normal city, freeway, and good mountain road, including 6000-foot altitudes. Fuel consumption checks over the same route after header installation showed the car was now getting 16.3 mpg.

This kind of response from an engine that was not too well tuned and obviously needed plugs is a good indication of the improved performance that can be expected from a really sharp powerplant, as 10 per cent more horsepower to the rear wheels is not unusual with such installations. The large round openings in the header plate



The reports below are based on actual tests by MOTOR TREND'S staff, and when necessary, on observation and control of outside test facilities and laboratory analysis. MOTOR TREND'S seal of approval appearing with the test report or in any future advertising of the specific item tested by us, means that the product has lived up to the manufacturer's claims for it.

more than cover the square apertures in the head. For maximum efficiency, if one cares to spend a couple of hours with a die grinder, the outer ends of the exhaust ports can be ground out to header plate shape and diameter. This eliminates the danger of grinding into the water jacket, as all the material is removed at the outer end of the hole.

This sort of additional modification is not necessary, for by just bolting-on you get more horsepower and enough fuel saving to pay for the equipment in one year if you are a 10,000-mile-a-year driver. On the basis of our test, for every five gallons of fuel used, you get an extra gallon free, which is a substantial return for a \$60.50 bolt-on item.

Prices throughout the Hedman line are moderate, the lowest unit going for \$60.50 and the highest for \$70.50. This is f.o.b. Culver City, and includes excise tax. For cars having single muffler systems an extension is required to make the connection from header to pipe. These are priced from \$4.35 to \$9.30, depending on the car. Racing headers are \$62.50 and require no extension as they can be used with straight-through pipes only. Chevrolet, Corvette, Ford, Mercury, and Plymouth from 1955 to 1959 can be fitted direct from Hedman's stock or from one of their many dealers throughout the 48 states. Catalog and price list are available direct from Hedman Muffler and Manufacturing Co., 11039-49 W. Washington Blvd., Culver City, Calif.

"GAF" COLLOIDAL GRAPHITE SOLVENT

Powerful cleaner removes oil varnish and leaves protective graphite film

THE ABILITY of Acheson colloidal graphite to remain suspended in a variety of liquids (as reviewed in MOTOR TREND Feb. '59), is being used by HRL of Los Angeles to provide lubricating qualities to an oil and fuel residue solvent. Marketed under the name of GAF ("Fast Acting Graphite" spelled backwards), the product is a powerful solvent with a high flash point that will dissolve varnish deposits in hydraulic valve lifters around rings and valve guides and at the same time leave a protective coating of microscopic graphite to lubricate the parts until normal oil flow reaches them.

This is best demonstrated by squirting some of the product on a polished piece of steel and watching how the graphite adheres to the metal while the solvent base runs off. The high flash point of 90° F and an evaporation point of over 200° keep the solvent active in the oil for several hours of hot engine operation. These two qualities give the

rings or valve guide assemblies.

MOTOR TREND used a 24-can case of GAF on a variety of cars from flathead sixes, through big overhead V8s, down to small overhead four-cylinder imports. Directions call for adding to crankcase oil several hours before an oil change, or pouring through the carburetor while hot engine is running at fast idle—or a combination of both. These are the simplest ways, and while there was some good lower end cleaning as evidenced by the floating particles in the crankcase drainings, there is no real good upper engine cleaning because the product is not retained long enough.

For the best results, the process that MOTOR TREND recommends, and the manufacturer hopes the user will follow, is to remove valve covers and spark plugs. Using the pouring spout furnished, squirt GAF into each valve spring and pushrod assembly so that it runs down the stem. Be generous with more of the product into each of the spark plug holes and add what is left to the crankcase. On one big V8 with noisy hydraulic lifters and an engine loggy from slow city driving, we used a whole can for the valve stems and plug holes and added another to the crankcase. A small four-cylinder import that was over-running badly after the switch was shut off, and had developed a ping on regular fuel due to carbon deposits of slow car driving, was treated in a similar manner, one can being sufficient. The spark plugs were replaced and the engine fired up. The length of time required to replace plugs in V8 engines is long enough to allow the solution to work, but for the smaller fours, wait about 30 minutes before starting the engine.

A word of warning: When starting the engine after such treatment, keep a good distance between your garage door or other



product time to do the job and eliminate smoking usually associated with such cleaning processes.

One of the problems with solvents (and there are many of them that do a fine job of removing combustion by-products) is that in the very nature of their dissolving properties, they also wash away the lubrication. Starting the engine after treating with some solvents is similar to turning over a rebuilt engine that was assembled without pre-oiling the

continued

buildings and the exhaust pipe, as the conglomeration of carbon, globs of heavy varnish residue, and other black and sticky materials will deposit themselves on any surface within four feet of the end of the tailpipe. Even after the heat has eliminated most of the water condensation from the exhaust, the dissolved and loosened by-products will continue to exit from the engine.

The engine was now run at fast idle or driven around for about an hour and the oil drained while the engine was still hot. Oil

filter was changed as this picks up a lot of "the big pieces" that have been dislodged and are floating in the oil.

Some of the new V8 engines require quite a bit of work to remove the valve covers, but if the engine is really giving trouble, especially with hydraulic lifters, the covers should be removed so that a generous supply of GAF can be squirted down the valve stems and pushrods. This gets the solvent directly on the residue and cuts cleaning time that might otherwise require more than one treat-

ment if the solvent were only added to the crankcase oil. The simple method of pouring through the carburetor while the engine runs at fast idle is effective for removing piston and combustion chamber carbon deposits but we still got the most improvement with the spark plug, valve cover removal method.

MOTOR TREND still has cars running with HRL colloidal graphite additives and we are convinced, by their continued quiet operation, that the graphite clings to the bearing surfaces. The ability of this finely divided lubricant to adhere to metal protects the solvent-cleaned surfaces and prepares them for the first few revolutions of the restart after treatment. We got good results with noticeable improvement after each test, the best method being that which requires the most effort, but is by far most effective. GAF is available direct from HRL, Inc., 923 E. Third St., Los Angeles 13, and costs \$1.50 for an 11-ounce can.

HELLWIG STABILIZERS

Bolt-on adjustable suspension aids eliminate spring sag, improve handling



YOUNG DON HELLWIG and his father probably know as much about the faults of automobile suspensions and methods for curing them as anyone we know. Of course, we don't know everyone who has been able to solve automotive suspension and torque control problems, but we do know that the Hellwigs have

a long list of satisfied customers, among them MOTOR TREND.

Our hybrid experimental laboratory car, the KaiSoto, was just about the most extreme example of an automobile suspension and rear axle needing help. The extra weight of the big DeSoto engine that was installed in the Kaiser Traveler chassis had squashed the front springs to the point where we always had a sensation of going downhill. It wandered all over the place and dove to the bottoming point under hard braking. This in turn made the rear end unstable with a lot of wavering under acceleration, and even on the mildest curves. The extra horsepower from our big V8 also did a fine job of winding the rear axle to where the driveshaft U-joints were at weird power-consuming angles.

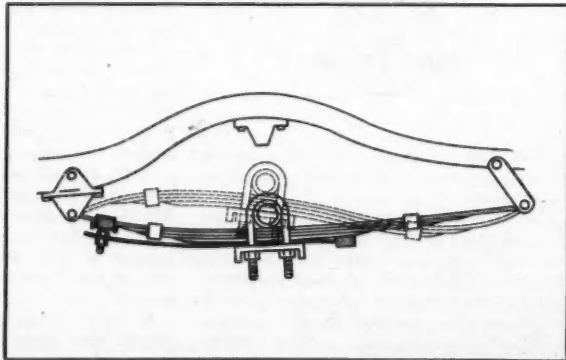
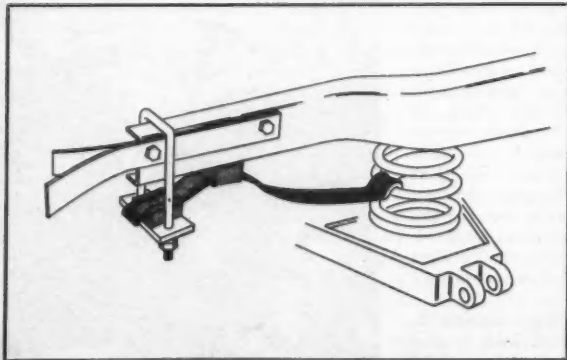
The Hellwig Products Co., in Glendale, Calif., manufactures stabilizers and overload springs for just about every postwar domestic car, but when one drives a car like the Kaiser (whose production and sales had a rather short run), it is about par for the course to get a lot of negative head shaking when you drive in to buy an accessory for the chassis. Don Hellwig didn't even bat an

eye when confronted with our problem. In fact, he recalled that they not only made control springs for this model, but had some in stock. Front stabilizer series F-800 and TC-500 series torque control for the rear (as shown in illustrations) were installed on the KaiSoto. No welding is required and both units are adjustable.

The first drive convinced us that they really do the job. Our once-poor-riding and bad-handling car, out of balance with a heavier-than-stock engine, now rode level, accelerated without that sickening lurch or thumping U-joints, and handled like it was on rails. Braking was improved by a great margin as the car now seems to squat, giving the rear brakes a better chance to work on wheels that are carrying more load due to reduction of front-end dive. Body sway and the tendency of the chassis to overload the outside front wheel on hard cornering have been eliminated to a point that we feel we could use this car for "stock car" road racing.

In addition to the types of suspension aids described, Hellwig makes overload and helper springs for rear coils, front leaf, and truck springs. They are available from dealers throughout the country, and if you are the least bit handy you can install them yourself. Just about every one of Hellwig's springs are adjustable to suit the individual problem and are manufactured under close tolerances to insure a perfect fit. Front stabilizers are priced from \$17.50 to \$20.50, and torque control and rear stabilizers from \$17.50 to \$28.95. For prices and models of other units contact your nearest dealer or Hellwig Products Co., Inc., 6231 San Fernando Rd., Glendale 1, Calif.

tests continued on page 58



Does YOUR Car Get "Shameful Dirty"?

EVERY TIME YOU WASH IT DOES IT RAIN CATS AND DOGS?

NEIGHBORS WILL ASK YOU
HOW YOU KEEP YOUR CAR
SO SHINY CLEAN . . .
... AND WHAT AN EASY
WAY TO DO YOUR
GIFT SHOPPING!

PENNA.: "I think your Mak-up-own is indeed wonderful, a perfect combination with KozaK, it has proven better than any product of its kind I've ever used."
R. J. Crawford

OHIO: "I have used my KozaK for nearly 4 years now and it has certainly paid off in time saved and savings on car washes"
J. H. Watkins

IOWA: "I am weary of exaggerated ads, and I just got your KozaK yesterday and set out to prove its worth. My car was a set-up with a coat of dust on it worthy of a desert storm. Well, a few minutes with KozaK worked a miracle right before my eyes!"
Rev. Wm. Holub

NEW YORK: "Your product does everything you claim and many people ask me if my Chevrolet has its original paint job (car is 10 years old)—that's how good it looks. We use one on furniture too." Michael H. Schwartz

MASS.: "I have been complimented so much on the way my car looks that my friends think I spend all my time on it, but that's not so. I spend so little time on it they don't notice me do it. What you say about KozaK is true. The more I use it, the better it works."
D. W. Love

OHIO: "The purchase of one of your KozaKs was an excellent investment. They really do a good job on our dark blue Buick and the Mak-up-own is perfect for the off-white trim."
C. C. Welch

WASH.: "About 8 years ago I bought a KozaK and have used it continuously ever since, but it seems to be losing its cleaning properties so you better send me a new one."
E. H. Harbison

BROOKLYN: "I have found that in a matter of minutes my car can be changed from a dirty, dusty car to a showroom finish using KozaK and Mak-up-own. You have made a life customer of me as well as a walking talking advertisement." M. Jerschauer

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© KozaK Auto DryWash Inc. 1957

How KozaK is Guaranteed

UNCONDITIONALLY

If the KozaK DRYwash Cloth has not saved its cost many times over after you have used it for thirty days . . . just write and the money that you paid for it will be refunded . . . you do not even have to return the KozaK. We are able to make this guarantee to you because in 32 years 11 million KozaKs have saved owners of cars millions of dollars in car washing. On this unconditional guarantee tear out and mail the coupon now.

KOZAK AUTO DRYWASH
217 So. Lyon Street
BATAVIA, N. Y.

We have lived in
Batavia since 1825
that's 132 years.
It's a
good town for
industry.

Phone C. of C.
Batavia 1140
For information
on a fine labor
market of home-
owning respectable
workers.

WITH KozaK you can save 80% of your wet-washes, and have a clean car every day the sun shines. Takes only 7 minutes of your (or one of the boy's) time—at a cost of less than 4c a DRYWASH. A \$3 or \$4 investment in a regular or SUPER KozaK DRYWASH CLOTH will return half itself every time it rains or snows — and keep on doing so for months—saving you \$50 to \$100 in former car washing expense.

As One KozaK Fan Wrote:

"There is no excuse whatever for a man to drive a dirty car if he knows there is such a thing as a KozaK DRYWASH process."

And, of course, that fan's beautiful Cadillac Fleetwood is his pride and joy—and is never dirty—except during the very rain itself and the short time it takes for it to dry off. Then 7 minutes DRYWASH and, presto! \$2 saved—clean car again—not a penny out of pocket—not a squeak from high pressure water washing—a real nice job you can be proud of. More fine cars are DRYWASHED daily than less expensive cars. And 11,000,000 KozaKs have been bought by critical people in the past 32 years—people who have saved thousands of dollars—and, more important, have got themselves bigger trade-in allowances for turning in a nice, clean car.

Our Way of Doing Business

Mail orders for KozaKs are remailed without fail the same day received and have always been. A simple request for refund in full is immediately answered by air mail with our expression of appreciation. So far as we know we have no dissatisfied customers anywhere, and have hundreds of thousands of enthusiastic users in every city, town, village, and most hamlets. You are never asked to return your purchase. If you don't like it for any reason, you keep it or give it away to your firehouse or police patrolman and get your money refunded in full besides.

Safe and Tested But Hard to Believe Until Used

NO other cloth or cleaner on the market gives your car a better tested safe . . . DRY-WASH action. KozaK is the ORIGINAL and ONLY Auto Drywash Cloth. There is no other way to have a clean car for only 4c a Drywash. KozaK keeps the showroom finish on your new car — revitalizes the clean bright shine of paint and chrome on your older car — helps get you a bigger allowance when you trade-in, as reported by thousands of KozaK users.

"Made by people you can depend on to do the right thing"®

KOZAK 217 So. Lyon St., Batavia, N. Y.

For remittance enclosed, please send postpaid at once, on your unconditional guarantee:

SUPER KozaKs
(Last 4 Times Longer)

- ☐ 1 for \$4
☐ 2 for \$7
☐ 3 for \$15

Name

Address

City

Zone State

Regular KozaKs
(Used by the Millions)

- ☐ 1 for \$3
☐ 3 for \$7
☐ 5 for \$10

STOP RUSTING!

You will save TEN TIMES its cost by SILICONIZING your bumpers and bright metal with the Mak-up-own supplied with these KozaKs before salt rusts them beyond all help.

☐ Send full size packet . . . \$1.

☐ Check

☐ Cash

☐ SPECIAL \$5.00 ORDER to introduce to you BOTH Super and Regular KozaKs, to help you decide on your next order, which suits you best. 1 regular (\$3) + 1 SUPER (\$4) \$7 value for \$5.00.



Here is the KozaK DRYwashed Austin-Healey that won Mr. and Mrs. J. B. Basil of Tucson, First place in the sports car division of Arizona's First Annual Autorama. Purchased in 1954—original paint perfect after 21,000 miles of daily driving and KozaKing!

What a KozaK® DRYWASH® Does:

- Removes dirt.
- Polishes as it cleans.
- Saves time and work.
- No hose needed—summer or winter . . . no pressure moisture to rust springs and start squeaks.
- It's safe—over 11 million used.
- Protects the finish.



for
STREET
or
FREEWAY
DRIVING
for
BUSINESS
or
PLEASURE

**MOTOR TREND
AWARDS SEAL OF
APPROVAL**

3.2 more
MILES PER
GALLON



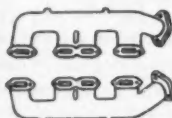
were obtained under ordinary street driving conditions. More efficient gasoline usage means less smog-producing fumes.

**FASTER ACCELERATION
FOR TRAFFIC SAFETY**

when you need that extra spurt of speed for passing or to avoid an accident.

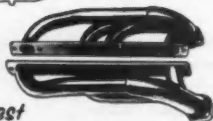
Tests show 1½ second gain from 0 to 60 miles per hour.

**BOLTS ON IN
30 MINUTES**



TAKE OFF
OLD STOCK
EXHAUST
MANIFOLDS

BOLT ON
HEDMAN
HEDDERS



*The Largest
Improvement for the
Smallest Investment*
**SEE YOUR DEALER TODAY!
FOR FURTHER INFORMATION
Write for FREE CATALOG**

HEDMAN

Muffler & Mfg. Co.
11039-49 W. Washington Blvd.
Culver City 2, California



PRODUCT USE TESTS

continued

VX-6 BATTERY ADDITIVE

Solution fails to dissolve lead battery sulphation

MATERIAL: AlSO_4 . Price: about 30 cents a pound in hundred-pound lots. Uses: chiefly used in commercial fertilizers.

Material: AlSO_4 . USP. Price: about \$1.50 per pound in sterile bottles. Uses: lotions, external applications, body deodorants.

Sounds like a page from some pharmaceutical journal, and some of it is. It concerns a chemical compound commonly called aluminum sulphate—the major ingredient of a widely advertised and endorsed product distributed by National Dynamics called VX-6 Cadmium Battery Additive. It is sold in liquid form in a package containing three one-ounce tubes for \$3.

This was an interesting test and involved not only actual use of the product, including a chemical analysis and talks with chemists about the lead sulphation-dissolving properties of the solution, but also a check into some of the endorsers.

MOTOR TREND talked with the head of one organization whose endorsement appeared in some of National Dynamics' advertising. He was very surprised to learn that his company was using the product and much more surprised to find they had endorsed it, as they "do not endorse any product." Questioning personnel in his organization brought to light a letter that an employee had written on company stationery stating that he used the product. We understand that legal action has been taken to stop the use of the company name in connection with VX-6.

Interwoven throughout these endorsements are some pretty fantastic statements about rejuvenating so-called "dead batteries." This qualification does not seem to be backed up as to whether the cells were really dead or the battery had been abandoned as not worth rebuilding because of damaged cells. All the claims were further qualified by the term "mechanically sound batteries." Cells become useless, when normal operation causes the by-products of the chemical reaction to deposit on the bottom of the battery case. These build up in depth until they reach the lower plates, causing them to short out. Until this happens a battery might be termed "mechanically sound." When it does happen, the additive marketed under the name of VX-6 will not dissolve them as claimed.

VX-6 is a relatively dilute solution of aluminum sulphate (6.42 grams per one-ounce tube). It contains a small amount of cadmium sulphate (.47 grams). The PH or acidity of the solution is 3.0. In the opinion of the chemical laboratory, "this mixture could have no beneficial effects when added to the cells of lead-acid storage batteries, and because it is so dilute, it would do no harm."

MOTOR TREND was fortunate in having a battery condition occur in one of the test cars that seemed to meet the situation most suited to the claims of VX-6. We preferred this to going into the test of a discarded or

junk battery whose prior history was unknown to us. Besides, we wanted a condition most suited to the purchaser who might contemplate such a product.

The battery was a six-volter, original equipment in a car nine months old. It was never used under severe conditions of cold start, the lowest temperature being about 35°. No radio or electric heater was supplied by this battery, and it was kept clean and serviced properly with distilled water although it required little of this because of the cool location. It had begun to labor to start the engine and within a few days would not even light the headlights.

A check of voltage regulator and generator showed this system was delivering normal charging rates but the battery would not retain them. Battery was removed and given an overnight charge but would not hold it for more than eight hours. One ounce of VX-6 was added to each cell and the battery recharged. Within eight hours the battery had given up the stored charge and was in the same "dead" condition. Examination of the lower cell compartment revealed sulphation up to the bottom of the plates. This undoubtedly was the original cause of the battery becoming incapable of holding a charge, and still existed after the addition of a solution that was claimed to dissolve these deposits.

One of the more spectacular tests to promote VX-6 is for the demonstrator (after he has a suitable audience) to disconnect the coil wire of his car and then proceed to run the battery down by cranking the engine. By the time the starter groans to a halt the battery is practically boiling. Then a tube of VX-6 is added to each cell and the demonstrator treats himself to a cup of coffee and a cigarette while the solution "works." Now, back to the car, hook up the coil and the engine starts as the battery gives it a lively turn.

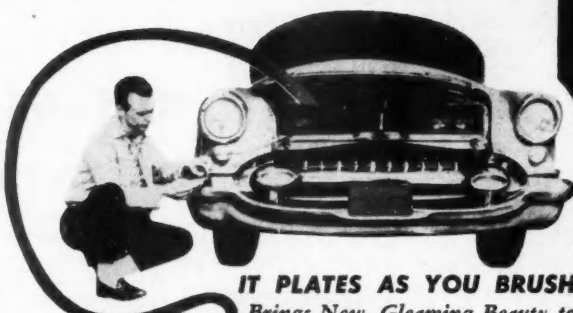
Any mechanically sound battery that is receiving adequate charge from the generator will do the same thing without adding anything to it. In fact, this is one of the advantages of lead-acid batteries—to rapidly rejuvenate themselves.

As a result of our tests, consultation with chemists and battery manufacturers, laboratory analysis, and investigation of endorsers and claims through the Better Business Bureau and the Federal Trade Commission, MOTOR TREND feels that this product is almost in the same category as the packets of white powder (table salt) that were sold to farmers by the thousands to prevent kerosene lamps from exploding. Three one-ounce tubes, enough to treat an average-size six- or 12-volt battery, sells for \$3 through department stores, some auto supply houses, or by direct mail from National Dynamics, New York City.

**"THE MONEY-SAVING WAY TO MAKE YOUR CAR
GLITTER AND GLEAM AGAIN" — CAR LIFE MAGAZINE**

REPLATE AUTO CHROME

**RIGHT ON YOUR CAR —
WITH PERMANENT PLATING**



IT PLATES AS YOU BRUSH
*Brings New, Gleaming Beauty to
Worn, Dull, even Blistered
Chrome Areas of Your Car.*

BRING BACK NEW-CAR BRILLIANCE

Here at last is the car-owner's answer to all chrome problems... a way that you can do actual **ELECTROPLATING** right on your own car. You put a brand-new, shiny plating on bumpers, grille, all auto trim. You bring back new beauty and sparkle to your car... **INCREASE ITS VALUE**... make yourself proud to own and drive it. With **SPEEDPLATER** you put on new metal as you brush! And the plating you apply becomes an **INDESTRUCTIBLE PART** of the metal you plate... bonds itself on—forms a hard, sparkling, metal surface that defies all elements!

BUMPERS—GRILLWORK—ALL CAR TRIM RESTORED TO NEW BRILLIANCE

Here is how easily you **REPLATE** your car... you simply clamp **SPEEDPLATER'S** wires to your car's battery, then dip **SPEEDPLATE Brush** into the miracle plating solution and plate anywhere around your car—without removing any parts. Safe, mild current works **FAST**—yet uses less battery juice than the tiniest light on your car.

**TESTED AND APPROVED
BY LEADING
AUTOMOTIVE MAGAZINES**

MOTOR TREND Magazine, New Products Test, July, 1958:

"We deliberately picked a difficult test area which was badly pitted and corroded... 'Our Plating kit was the Empire Speed Plater. The final result matched the chrome and was entirely satisfactory. Anyone should be able to obtain similar results..."

ROD & CUSTOM Magazine, New Products Test, April, 1958:

"Speedplater not only can be used to restore scratched, worn or blistered chrome on any part of your car, but can be used to plate metal not chromed before... For those wishing to plate their own items right at home without having to depend upon a commercial chrome shop, we'll vouch for the Speedplater's doing the job by saying that it works exactly as described, giving a lasting, durable, bright coating."

Car Dealers & Service Stations Make Big Profits with Special Heavy-Duty Outfit

Now you can make **TERRIFIC PROFITS** plating right in your own shop—without removing bumpers, grille, etc. Increase value of your used cars! Touch up new cars! Restore worn chrome areas to bright, new sparkle! Buick Dealer says: "Wonderful. We had excellent results". Heavy Duty Outfit electroplates on current from standard 12 volt battery. Entire Outfit, **COMPLETE**, only \$34.95. Includes Plating Brush with Permanent Anode, Wires and Clips for Battery Connection, Special Buffing Wheels and Compound, Special Grinding Wheel, Stripping Solution to remove old chromium, Rust Remover, Special Polish, enough Plating Solutions for dozens of cars! You quickly make back entire cost on your very first job! Additional supplies always available from us at rockbottom prices. **MONEY BACK GUARANTEE.** Order now. IF COD, send \$5 deposit.

CASH REFUND IF NOT COMPLETELY SATISFIED

MAKE BIG MONEY PLATING

Now you can add to your income during spare-time hours... because 8 out of 10 cars on the road today **NEED RE-PLATING**. You can charge \$5.00 for touching-up to \$50.00 for replating an entire car.

Plating is fun, too! You'll get a kick out of taking rusted, pitted, worn metal and bringing it back to shining smoothness. When neighbors see the brilliant plating on your car, they'll want you to do the job for them.

And you can plate other things for profit, too... faucets, appliances, tableware, cutlery, tools, doctors' and dentists' instruments... you can get more solutions at low prices any time—also solutions to plate silver, gold and rhodium. There's big money in jewelry and silverplate work! You get **ALL INSTRUCTIONS** for plating with your Speedplate Outfit!

MAIL COUPON NOW—YOU RISK NOTHING

If you want to put new, permanent, gleaming plating on your own car, you can do it right away and not risk a dime. If you are not **COMPLETELY** satisfied with great results, just return your outfit in 30 days in good condition and get **FULL CASH REFUND**. **ACT NOW!** Here's what you get: **SPEEDPLATER Brush**, with permanent Anode for life-time plating; Wires and Clamps for battery hook-up; enough solutions to plate several cars; Special Buffing Wheels and Buffing Compound, Special Metal Polish. Full simple instructions. Just mail coupon with only \$1 deposit, then pay postman \$13.95 plus postage when **SPEEDPLATER** arrives, or send \$14.95 with order and we pay all postage charges. **SAME GUARANTEE EITHER WAY. CASH REFUND IF NOT COMPLETELY SATISFIED.**

**EMPIRE MERCHANDISING CO., Dept. MT-49
4 North 3rd Ave., Mt. Vernon, N. Y.**

Please rush the electroplating kit I have checked.

- ☐ Regular **SPEEDPLATE OUTFIT**, \$14.95 (if C.O.D. send \$1 deposit).
- ☐ Heavy-Duty Service Station Outfit, \$34.95 (if C.O.D. send \$5 deposit).

☐ I enclose full price, send postpaid.

I understand that I must be **COMPLETELY SATISFIED** or I may return kit within 30-days for immediate **CASH REFUND**.

Name _____

Address _____

City _____

State _____

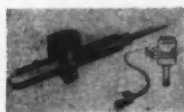


FREE!

1959 EDITION
send only 25¢
to cover handling
and mailing
(refundable 1st order)

**NEW GIANT
CATALOG**

Thousands upon thousands of 1959 accessories from our stock of over 150,000 items. Most not available in regular Auto Parts Stores. Lowest prices in our history. Order your catalog today!
SAVE NOW . . . ORDER ITEMS BELOW TODAY



"AUTO-TIMER" Timing Selector. Get more POWER, up to 20% MORE gas mileage, quicker starting. Adjust spark instantly from your dash for all driving conditions. Triple chromed. Only \$8.95.

NEWHOUSE GLASS-PACK MUFFLERS. Now only \$5.00 to \$8.00 for ALL CARS. Outlast THREE stock mufflers. Send \$2.00 deposit, balance C.O.D. EXHAUST "CUT-OUT" \$3.75. "BY-PASS" \$7.50. Dash controlled.

**POROUS
BRONZE
OIL
FILTER**



FENDER SKIRTS SALE . . . NEW Rush-mounted, inside fit . . . Ford, Mercury, Plymouth, \$9.95 pair. Most other cars \$11.95. "FULL-SWEEP" Skirts (with chrome bead) nearly ALL cars, only \$24.95 pair.



GRILLE BARS. Clean smooth lines of heavy chrome tubing sweep all the way across, curve beautifully at each side. 1957-59 Chevy, '52-58 Ford, '55-56 Plymouth. New low prices. Complete \$29.95.

"INSTANT-CHROME" plate anything. Sensational invention, gleaming surface easily applied to rusty bumpers, trim, plumbing fixtures, etc. No need to remove trim for replating. \$4.95 complete.

**NEW
CHROME
KITS**
\$4.95



GENUINE "CHAMPION," "A.C.," "AUTO-LITE" SPARK PLUGS, guaranteed 10,000 miles! Remanufactured, your Favorite Brand, sets of 8 \$3.92. Amazing offer . . . they're so GOOD send \$1, pay balance 30 days.

Crankcase **"NEUTRA-PLUG"** has Active-Magnesium to NEUTRALIZE acids. Alnico MAGNET traps abrasive particles. Doubles engine life, oil lasts longer. NEUTRA-PLUG only \$2.45. "Deluxe" Model \$2.95.



SEND ONLY 25% DEPOSIT . . . BALANCE C.O.D.

Car Make . . . Year . . . Model . . . No. Cyl. . .

Name . . .

Address . . .

City . . . Zone . . . State . . .

Quantity	Description—Give Info	Price

Calif. residents add 4% sales tax.



5005 E. Beverly Blvd., Dept. 111, Los Angeles 22, Calif.

40 MOTOR TREND/APRIL 1959



PRODUCT USE TESTS

continued

MILEAGE MINDER

Fuel pressure stabilizer offers magnetic filter trap



HEAZY PULSATIONS of the large fuel pumps on late-model engines often work to the detriment of low-speed carburetion but are necessary to meet the fuel demands of big engines at high speed. Float chamber valves and seats that are only slightly worn cannot cut off a blast of fuel of the kind that these larger pumps are able to produce. Momentary fuel surges in float chambers caused by sudden stops can cause the float valve to open just as the pump is delivering one of these extra-strong streams of gasoline. The engine stalls, the carburetor floods, and the car is filled with raw gas fumes. This is not only annoying but wasteful, as gasoline that never reaches the jets is lost. Float valves and seats might also be picking up minute particles of rust scale or other ferrous materials that block full seating of the valve.

The Paser Manufacturing Co., of San Francisco, has been making a fuel pressure stabilizer called the Mileage Minder. This well-made and trouble-free little device, installed in the fuel line between the pump and the carburetor, contains a spring-loaded diaphragm, a generous reservoir, a porous bronze filter, and a powerful magnet with a large area. The unit is really a "header tank" for fuel; the diaphragm soaks up the surging pulses put into it by the pump and allows the fuel to come out the other side in a smooth flow but in the same volume as it came in.

As part of MOTOR TREND's test, we hooked up the input side to the output of an electric fuel pump. This pump squirted a solid column of fuel in a rapid series from full on to off. Pumping through the Mileage Minder, the stream that came out was solid and steady, without the pauses between pump pulses. The pump was not laboring and we filled a 16-ounce graduate in the same length of time as without Mileage Minder. This was

conclusive proof that the unit does not cut fuel volume.

In the process, all of the fuel must pass through the porous bronze filter and around the large area of the magnet. Iron oxides and microscopic particles that have passed through the fuel pump strainer are trapped in the Mileage Minder bowl, where they can be easily removed. The bronze filter can be cleaned and metal particles attracted to the magnet easily removed, as both of these come out when the bowl is detached. The powerful magnet is capable of attracting and holding a greater quantity of small iron filings than would ever pass through it in 100,000 miles of driving.

In addition to providing smooth fuel flow with no loss of volume and doing a good job of filtering out particles missed by fuel pump strainers, Mileage Minder will carry you extra miles on a "tired" fuel pump diaphragm. A condition called "vapor lock," often attributed to gasified fuel in the line to the carburetor, is usually caused by a fuel pump that will not pump the required amount of fuel, once excessive engine heat conducted to a "tired" diaphragm through the pump body causes it to give up completely. Occasional squirts that it puts out are not sufficient to keep the float bowl full and it gets farther and farther behind until the engine stops.

Mileage Minder will in most cases provide a ready supply of fuel to the float chamber, evening out and storing the weak supply from the pump. This is not a cure-all for this condition which can exist in new cars as well as older models, but it may save trouble until the fuel pump can be put back into top shape and which should include a pressure test while hot.

Mileage Minder is available in full metal bowl for \$7.95 and in glass bowl for \$6.95 from Paser Manufacturing Co., 537 Turk St., San Francisco 2, Calif.

PRODUCTS AWARDED MOTOR TREND'S SEAL OF APPROVAL

(Date is that of issue containing test report.)

Borolyte Battery—Feb. '59

International Tire and Rubber Division,
Ward International, Inc., Los Angeles

Car-Skin—Feb. '59

Car-Skin Products Corp., Flemington, N.J.

Heath Electronic

Tachometer—Mar. '59

Heath Co., Benton Harbor, Mich.

HRL Colloidal Graphite—Feb. '59

HRL, Inc., Los Angeles

Lodge Spark Plugs—Mar. '59

Lodge Spark Plug Co., Los Angeles

Midland-Ross Power Brake—Feb. '59

Midland-Ross Corp., Owosso, Mich.

Plastic Steel—Mar. '59

Devcon Corp., Danvers, Mass.

Simichrompoli Metal Polish—Feb. '59

Competition Chemicals, Iowa Falls, Iowa

Traction-Master

Shock Absorbers—Mar. '59

Traction-Master Co., Los Angeles



HERE'S HOW a simple \$4.95 device can SAVE YOU \$200 . . . or your money back! Magna-Power is sold on an unconditional guarantee—with no time limit!

YOU ARE THE SOLE JUDGE
CAN YOU AFFORD to drive without it?
... it can save you 80% of your engine repair bills.
... it will return the \$4.95 investment IN FULL every time you change your oil.

NOW! as a DIPSTICK

Easy to install

Easy to clean.

We are highly flattered by our imitators trying to capitalize on our research work. Magna-Power is the only product of its kind that has been tested with two engine groups run side-by-side, one group with Magna-Power and the other without.

Many motorists want Magna-Power as a dipstick. We now offer it that way

—BUT cannot guarantee it; nor can we promise longer engine life, longer spark plug life, less sludge, etc. Unless we put the CORRECT alkaline alloy in the CORRECT place it will not work. Just any old piece of magnesium will not do the job, and it must be placed in the *low point* of the oil system, or it is almost totally ineffective.

Why wouldn't the idea work in the oil filter, on the dipstick or in the valve chamber was at first a baffling thing. All have good oil circulation. The full flow filter should be best if circulation

were the controlling factor. The answer is *time*. At 10,000 miles per year, and about 35 miles per hour, your engine runs less than 300 hours during the *entire* year. Since a year is about 8,760 hours this is only 3½% or about 50 minutes per DAY.

You must have Magna-Power at the low point of the oil system. The alkaline alloy must contact the heavier, emulsified moisture-oil-acid mixture and the metal of the engine while it is parked.

WHY A MAGNET?

We know of no comparative tests, that show any difference in wear rate when run with magnets. True, they pick up some small fragments of IRON or STEEL (but no other metals) and some "slurry" of corroded iron or steel wear debris. This looks very impressive and dangerous, but actual use shows that it causes no visible harm. Apparently they settle out anyway; even engines without any filter at all show no damage from these metal slivers. Most of the abrasive material removed by the filter or by settling is non-magnetic anyway and hence is unaffected by a magnet. But, since the appearance of metal slivers is so frightening, and since most of you still firmly *believe* that magnets are good things, we will continue to supply them.

In the differential and standard transmission plugs, now offered as our Magna-Plug, the magnet does have a definite value. A sudden increase of chips or filings, indicates that the gearing or other parts are deteriorating. Expensive repairs or delays can then be avoided by early action. This is also one of the values of using the Magna-Power in the engine.

Turn the page and read the amazing stories of Magna-Power!

HOW MAGNA-POWER SAVES YOU MONEY

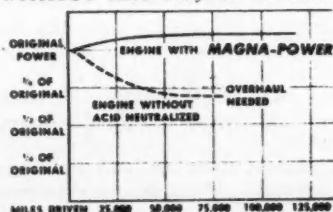
1. USE LESS OIL

Your oil will last longer. Not only can you change less often, but also you can get more miles per quart in between. This can be real savings each and every month. Think of it—with Magna-Power you can SAFELY drive 4,000 even 6,000 miles between changes, and if you drive long high-speed trips, you can safely double these figures with Magna-Power. The limiting factor on your oil is now the build-up of combustion products—non-corrosive organic acids and other blow-by "garbage." Magna-Power checks the mineral and corrosive organic acids; it helps prevent the formation of resins that make sludge and engine fouling carbon deposits.

Two oil spots—one with Magna-Power on left, the other on right without. Same kind of oil—same engine—same conditions. Higher priced dispersant oils may show darker for two oil change periods due to cleansing action on deposits in engine. Save money and have cleaner oil at the same time.

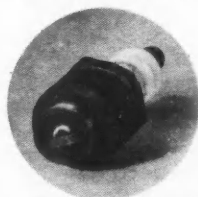
2. MORE POWER

Engines maintain full power (or actually increase)—for amazingly long mileages. Many have 180,000 to 200,000 miles and more—WITHOUT ANY MAJOR OVERHAUL.



3. BETTER IGNITION

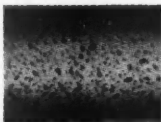
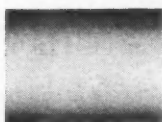
Your Spark Plugs will last 2 or 3 times longer! Magna-Power slows down the deposit build-up in the engine and reduces the contaminating layer on the spark plug's inner insulator. This means real savings—not only in money but also in time and inconvenience of having them changed. Cadillac owners report 18,000-20,000 miles and plugs STILL in good shape—Ford, Chev., Plymouth owners, 25,000 and 30,000. Stude, Rambler, all show same reduction in-fouling. Savings of \$15 to \$20 are yours on this one item alone.



The plug shown is 1 of 8 with 61,810 miles on them and still showing nearly new efficiency. One engine has gone 188,438 miles so far on 2 sets of plugs—it is still in top condition!

4. LONGER ENGINE LIFE

Carefully controlled fleet and passenger car tests show wear reductions with Magna-Power of 3 to 1 or better. You can now drive incredible distances without overhaul—save hundreds of dollars.



The bearing at left above is from an engine with Magna-Power after 112,000 miles in 11 years. It is still good for many years of service and 4 times the miles. At right is one from a similar unprotected engine after 63,000 miles; IT IS WORN OUT!

The Story of Magna-Power

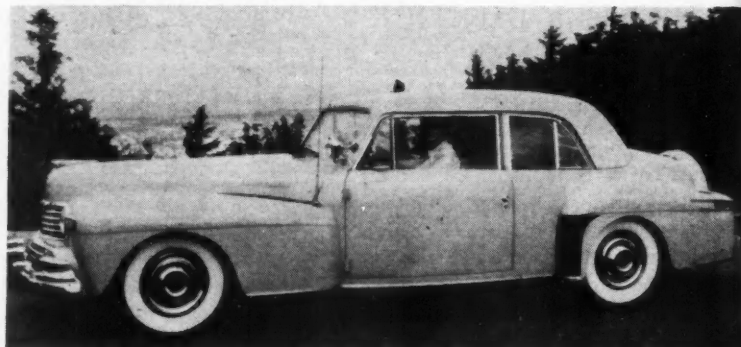
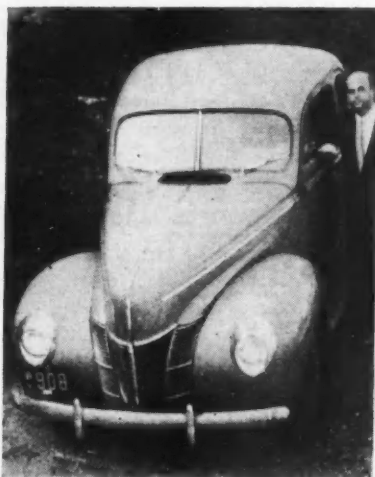
—the amazing magnesium-alloy accessory that actually triples the life of car engines

The principle of Magna-Power was discovered by accident.

During the hectic early years of World War II, a brilliant young M.I.T. graduate named Win Johns was doing vital engine testing work for the U.S. Navy. One of the rigorous tests was designed to discover how long an engine could be run at 250° F. before it burned out. One engine was set up and run at 1800 for 50 hrs. But—at the end of that time, the engine showed no sign of burning out. Johns and his staff tore the engine down and discovered, to their amazement, that there was little or no wear!



Fabulous '51 Ford is shown here with owner Lucius Kingman of McLean, Va. Purchased new by Kingman—Magna-Power was installed in it after 15,000 miles—the car now registers over 100,000 miles. "It has more power now than when it was new," says Kingman. "The spark plugs last about 40,000 miles! Amazingly, it burns almost no oil—maybe a quart every 1,500 miles!"



Continental Classic is kept in like-new condition by owner C. F. Childers of Portland, Ore. Since installing a Magna-Power in this '48 Cont., Childers says, "I can notice an increase of power. It runs smoother than a new car. The plugs stay perfectly clean. And even after being garaged for several weeks, I get trouble-free starting."

Discovers Principle

Johns reasoned that this test engine somehow was not being subjected to the factors that cause wear under normal operating conditions. It was found that since this engine was operating *above* the dew point of the blow-by gases, no moisture was getting into the oil, as is common with car engines. Johns knew that sulphur present in all grades of gasoline was (after combustion) combining with moisture in car engine crankcases and forming sulphuric acid. It is this sulphuric acid that attacks the vital parts of engines, aids the formation of damaging sludges, gums and resins and causes 90% of all engine wear. Johns then reasoned that if there were some way to destroy the acid that forms in the crankcase of car engines, he would be able to stop the major cause of engine wear and power fade.

Develops Magna-Power

Putting this principle to work, Johns experimented by putting various alloys of magnesium in engine oil to help neutralize and destroy the corrosive acids as they are formed. After many months he developed a special magnesium alloy that was perfect for the job.

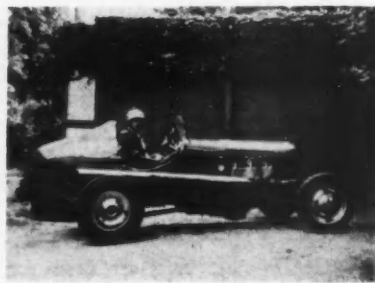
Then came months and months of testing to prove beyond a shadow of a doubt that his discovery actually did stop the major cause of engine wear. Johns equipped a 1940 Ford coupe with his special magnesium alloy by attaching a bar of the metal to his crankcase drain plug. He also attached a tiny Alnico magnet to the magnesium to remove any iron or steel filings in the oil. The car was then driven in normal use—stop and go, short trips and long trips. After the Ford had been driven 115,000 miles *without* a single major overhaul or repair, the pistons were removed for inspection. Everyone—including the inventor himself—was astonished!

There were practically no signs of wear! Some of the original machining marks were still visible on the rings and pistons. The engine was put back together again.

Today Johns' 1940 Ford is still being driven every day. It now has 187,214 miles on it! Imagine! 187,214 miles! It still retains the pep and power it had the day it came off the assembly line!

Many thousands of miles of controlled tests were conducted on other cars and trucks before Johns put Magna-Power on the market. In one notable experiment,

JOHNS RESEARCH LABORATORIES, DEPT. M-4, MIDDLESEX, N.J.



Pikes Peak Racer built by George Balster of Lincoln, Neb., contains a 3-carb, full-race '50 Studebaker engine. George credits Magna-Power with providing "more power, faster starting and a remarkable elimination of wear on all moving parts." Also Magna-Powered is George's family car, a '51 Chev. Sedan with 78,000 miles on it!

Magna-
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Magna-Powered trio, owned by the Stout brothers, Arthur and Robert, of Plainfield, N.J., is made up of '56 Chev Bel-Aire Conv., '38 Ford Station Wagon and '26 Lincoln Phaeton (Brunn Body). Bob (shown above) and Art are firm boosters of Magna-Power. "All of our cars have more pep and power due to the Magna-Powers

in them," Art states. "Our 'baby,' the prize-winning Lincoln, doesn't burn any oil at all. And the oil stays perfectly clean between changes. I'd say a Magna-Power is definitely worth much more than the price you pay for it!" Not shown above is Art's family car, a '54 Nash Rambler—also Magna-Powered!

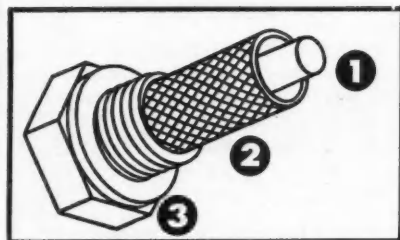
the Farmers & Consumers Dairy Co. of Morristown, N.J., put Magna-Power in half of their 22 door-to-door delivery trucks. After being driven many thousands of miles, the engines without Magna-Power showed $5\frac{1}{2}$ times more wear than that of the engines with Magna-Power.

How Magna-Power Works

Just exactly what is Magna-Power—how does it work? Actually, Magna-Power is a very simple little device. It is a carefully machined bar of a special magnesium-alloy metal. It is attached to the crankcase drain plug (the correct size for your car). It cannot come in contact with moving parts. But it is always in direct contact with your engine oil. Here are the three main things Magna-Power does: 1. effectively neutralizes (destroys) corrosive acids in your oil; 2. greatly reduces the formation of damaging sludges, gums, and resins; 3. destroys the cause of deposits on spark plugs . . . deposits that rob by pre-ignition and internal shorting.

Magna-Power's Benefits

The direct benefits Magna-Power can give your car engine are these: It reduces wear on vital moving parts up to 80%; it increases engine power by eliminating sludge and resin formations; it slows the deposit build-up on spark plugs—promotes far longer plug life; it allows you to use your oil efficiently for over 3,000 miles before a change is necessary.



1. Powerful Alnico magnet that removes damaging iron and steel filings from the oil.
2. Special magnesium alloy metal that constantly neutralizes and destroys all corrosive acid in the oil as it forms.
3. Crankcase drain plug—the correct size for your car.

Why Magna-Power is not in new cars

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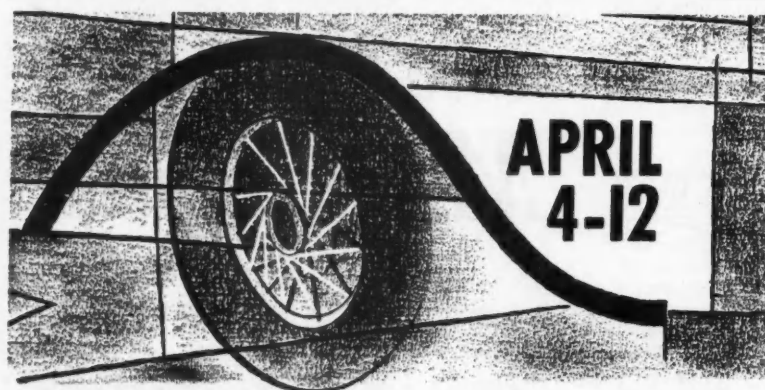


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INCOME TAX



continued
from page 23

Q. Near the top of 2106 there's a space for "Total Mileage During the Taxable Year." What proves Total Mileage?

A. Well, you could always say to the agent, "Come out to my car. It's 3½ years old, shows 35,000 miles, which figures 10,000 miles a year." A simpler way is to show repair tickets on which mileage is written. Careful taxpayers keep a record book that indicates all data for the year. Other car owners record January 1st speedometer readings behind the rear view mirror or on tape under the dash.

You can figure your "Mileage Applicable to Business" by keeping track of business mileage. Business mileage—40, 50 or 60 per cent or whatever percentage it may be of total mileage—is multiplied by the number of total dollars spent on the car. This gives deductible car expenses. But sometimes you may be forced into making an estimation. The government goes along, if you're not unreasonable, compared to other people doing the same work you do.

Most taxpayers don't know that collectors have many records, accumulated over the years, of average returns. They have set up averages for almost every business use of an automobile. These are not definite limits which you may not go beyond, but if you are within averages, agents are not likely to consider your estimate unreasonable. When you exceed the average is when you may get into trouble with an examining agent.

Q. This bit on "Deductible Depreciation" always throws me. How do we figure depreciation on a car without struggling for three weeks?

A. It's very simple—up to a point. Depreciation is the pro rata cost of the automobile.

Q. What's this pro rata business?

A. It's a portion of cost for each year of use. If you buy a car for \$2000, and it's usable four years, \$500 a year is the "pro rata" cost. Let's fill in a sample 2106. First item is "Make and Style of Vehicle." I'll list a Ford bought in January of 1957 for \$2000.

Q. Is our \$2000 cost the same thing the form lists as "Basis?"

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A. No. The tax "Basis" is frequently different from what you think you paid for the car. For example: You didn't pay \$2000 cash for the Ford if you traded in another car, such as a \$500 Nash. So the government wants to know what's in the Nash. Form 2106 has space to figure under "Old Car Traded In" the value of an old car. Fill this section in, then keep right on going into the section marked "Present Car." First "Purchase Price," then "Salvage Value."

Q. How do you figure Salvage Value?

A. Our government usually considers a car's life as four to five years, if you put a reasonable Salvage Value on it. You can determine Salvage Value by deciding the car has a useful life to you of so many years and guessing what the car might sell for at the end of this period. After four years of use the Ford would probably be worth about \$250. Now follow the instructions on 2106 to find the true cost basis, which for the Ford turns out to be \$762.

So now you see, the term "Basis," which might be thought of as cost, can be a completely different figure. You could have sold the Nash for cash and bought the Ford without a trade. Then we wouldn't have had to go through this complicated arithmetic. Tax-wise there's no great difference in whether you trade a car in or buy for cash. Situations where it is important to sell first are much too complicated for anyone but fleet owners.

Q. What's the easiest way to figure depreciation?

A. From my point of view the easiest way is the "Straight Line" method. Divide the basis of the car by the estimated years of use and use the answer to your division problem as depreciation for each year. There are also "Sum of the Digits" and "Declining Balance" methods, both being high-powered ways to obtain maximum depreciation in the beginning. They are economically correct because new automobiles depreciate faster than old cars. But such methods are complicated to establish and use. Better leave them to your accountant or tax expert.

Q. Do I understand that these latter two special methods are important if you buy a car every year or two, but not so important where you own a car four or five years?

A. No matter what method you use, you end up with the same amount of deductions over a period of years. If you own a car only three years, the method of depreciation doesn't make much difference. But here is something important: Many states allow you to depreciate a car only by the Straight Line method. You could be stuck with using one method for a Federal return and have to refigure by another method for the State return.

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Q. How about the return of a man who uses his personal car in business but is reimbursed by his boss? Does this man have any special problems?

A. None at all. We'd go through the same 2106 and deduct from total expenses the amount received from the boss. In other words, if it costs the man \$800 to drive his car for a year and the boss gave him \$300, the difference of \$500 is a legal deduction. Money received in excess of expenses, as might be earned by a Renault driver being paid Buick rates, should be reported as income earned.

Q. Suppose I keep accurate records for two months, then no records for the next 10. Could I use two months to average out the entire year?

A. In my opinion it *might* work. But I'm not sure. An agent reviewing your 10 months' figures would not have to accept them. He might approve the return if he thought you were being reasonable. But this shortcut would certainly *not* be a safe one. You'd be better off with nine or 10 months of accurate figures and an estimate of the other two or three.

Q. Based on your experience as a tax consultant, is it worthwhile going to the trouble of all these bothersome records when using a car for business only part-time?

A. Definitely! Bear in mind the first law of the tax return: Keep no records and get no deductions, except the 10 percent everyone has.

Q. But records take time. They're a lot of trouble and always seem to get lost at the wrong time.

A. The obvious solution is a credit card. There's no extra cost for gasoline and you have complete records at tax time. We often run into taxpayers with credit cards who were on trips and couldn't use the card. All they did was keep track of cash-out-of-pocket purchases. The important thing for everyone using a car is to keep records of expenses. Then arrive at percentages of use based on mileage separation of the car's use for business and pleasure.

There's also the fellow who drives a more expensive car than he can afford by kidding himself that it's tax deductible. He's forgotten you can't make money by throwing it away. No taxpayer should fool himself that he makes money by spending for overly expensive items that may be deductible.

Q. Am I right that it may cost less if the item is fully deductible, but you're not getting it for nothing?

A. You know as well as I do that you can't save more by spending more. The government may help a bit absorbing some costs, but you still have to pay a major portion. It's not for free. /MT

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CALIFORNIA

GLENNDALE: Haph Allen's, 6235 San Fernando Rd.
SAN FERNANDO: Conea Muffler Serv., 1517 Truman Rd.
SAN JOSE: Aragon's Auto Supply, 136 E. Santa Clara St.
SANTA MONICA: Gunney Auto Supply's 603 Wilshire Blvd.
GRAND AUTO STORES: Oakland, Alameda, Hayward, Berkeley, Vallejo, San Leandro, Richmond, San Jose, Redwood City, San Rafael

CANADA

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VICTORIA, B.C.: Dickson & Dunn, 1620 Blanshard St.

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COLORADO SPRINGS: Empire Auto, 410 W. Colorado
DENVER: Jake's Auto Parts, 775 Champa St.
LONGMONT: Charles M. Harris Auto Parts, 919-925 Main

CONNECTICUT

HARTFORD: Kulak Stores, 323 Albany Ave.
NEW HAVEN: Walters Automotive Dist., 151 Day St.

GEORGIA

DECATUR: Columbia Auto Pts., 4176 Glenwood

ILLINOIS

CHICAGO: Admiral Auto Stores, 5558 W. Addison
CHICAGO: Warshawsky & Co., 1900 S. State St.
DANVILLE: Fagan Auto Parts, 26 S. State St.
DECATUR: Merry Rancher Motor Supply, 304 E. Wood

INDIANA

FORT WAYNE: Holly Dist. Co., RFD 7, Hesse Cassel Rd.
GARY: C & L Auto Supply, 3888 Broadway
INDIANAPOLIS: Washington Auto Parts, 2113 E. Washington

IOWA

CEDAR RAPIDS: Rappoport Auto Parts, 630 2nd Ave. S.E.
DAVENPORT: Strum Auto Supply, 413 15 W. 3rd St.
DES MOINES: United Auto Supply, 410 13th St.

KANSAS

LAWRENCE: Pipper's Automotive Parts, 211 E. 8th St.
SALINA: Salina Spring & Axle Serv., 672 S. Broadway
TOPEKA: Grege Tire Co., 300 S. 10th St.
WICHITA: Phipps & Sons, 3036 S. Broadway

KENTUCKY

CORBIN: Owens Custom Shop, 302 19th St.

LOUISIANA

BATON ROUGE: Marks Seat Cover Center, 1917 Scenic Hwy.
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BATON ROUGE: Muffler Shop, 4085 Florida, 2230 Plank
LAKE CHARLES: Marks Seat Cover, 217 E. 20th St.
NEW ORLEANS: Late Model Auto Pts., 2045 Poydras St.

MICHIGAN

DETROIT: Great Western Auto Parts, 1501 Grand River
ROSELAND: United Auto Parts, 30712 Grafton Ave.

MINNESOTA

MINNEAPOLIS: The Big Wheel Auto Stores, 1418 E. Lake St.

MISSOURI

KANSAS CITY: Sterling Tire, 600 E. 31st St., & 418 Truman
ST. LOUIS: County Auto Parts, 6910 Easton Ave.

NEW JERSEY

CAMDEN: Rem Auto Supply, Cor. 22nd & Federal Sts.
PASSAIC: J & S Dist., 257 Monroe St.
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ALBUQUERQUE: Ace Auto Supply, 1513 S. 4th St.

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DURHAM: Summer Auto, 300 W. Front

OHIO

CLEVELAND: United Home & Auto, 12504-26 St. Clair
HAMILTON: Ross Auto Supply, 411 S. 2nd St.

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OREGON

EUGENE: Pacific Auto Supply, 44 W. 10th
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GM's NEW SMALL CAR

An interview with the President and Chairman of the Board at General Motors discloses some interesting sidelights of their small car project.

QUESTION: Do you have anything further to say about the small car at this time?

MR. GORDON: We have been pretty active in work on small cars and nothing has happened in the time intervening between our previous announcements (Motorama, New York) and the present which is at all discouraging to our program.

Q. Is this a General Motors corporation or division project?

MR. DONNER: Divisions are still part of General Motors. I don't know how you differentiate.

Q. What I meant was something more or less like General Motors Research, as compared with divisional engineering.

MR. GORDON: On any project of this type, we have a lot of people working on it, including our product study groups and research group.

Q. It could not be pinpointed as to which division would market this small car?

MR. GORDON: None at the present time. We have not reached the point where any division is going to market it because we have not announced we are going to produce one.

Q. Is it in the range of your thinking that possibly a new division might market the car if it is decided to market it?

MR. DONNER: We have not reached the point where we have even considered that kind of possibility.

Q. Has any research shown the advantage of an engine in the rear as against the conventional engine location?

MR. DONNER: They both work pretty well.

Q. Have you reached a point of no return?

MR. GORDON: No, not yet.

Q. When does that come—the day you announce?

MR. DONNER: Mighty close. After all, we do that every year. We come out with new models every year.

Q. Is there anything to indicate there is a worthwhile market for a smaller or compact car—I mean a real market and not just an average foreign car—Rambler or American Motors?

MR. DONNER: I was going to say it is always amazing to me what these so-called market studies reveal. You get a combination of market analysts and statisticians together and the range of estimates they give you can be somewhat confusing. When you look at some of these estimates you think there is a big market; you look at other estimates and you are not quite as optimistic about it. I question whether anyone can pinpoint that market at all today because the public hasn't seen the cars they could buy.

Q. Assuming the market was estimated at six million this year and we had smaller cars—would not that increase the estimate?

MR. DONNER: It might if it increased second and third car ownership. It could well increase the number of sales. It might even appeal to people who are not now buying cars. One interesting thing to me is that in spite of the thought expressed by some over the years that we are reaching a point of saturation, nevertheless year after year we come along with a bigger percentage of families owning cars and a bigger percentage of families owning two or three cars. That trend is still continuing. Therefore, if any type of car came along that increased desire of ownership, you could wind up selling more cars than if you didn't have it. There again only time can tell.

Q. But if you did—if the cars were shortened altogether, and you added that, and if cars and parking spaces were cut down to such smaller cars, parking difficulties would not be relieved much?

MR. DONNER: I think that the public is going to continue to buy cars despite parking difficulties.

Q. There is one company that, even though it makes small cars, refuses to admit it and calls them "compact" cars, and I wonder what you will call yours.

MR. DONNER: I would not know.

Q. When can one expect some definite thinking on the small car—timewise?

MR. DONNER: That would be a very hard one to answer.

Q. Did you say earlier that you had not made a decision on it or that you haven't made a decision to announce it?

MR. DONNER: I think the best way to put it is to reiterate what I said in Boston—the time hasn't arrived to make any announcement of a decision.

Q. There has been some estimate of the combined market of import cars and U. S. smaller and/or compact cars, which might add up to a million—as much as a million this year. Would you give us your idea of whether it would be more or less than that?

MR. DONNER: I have not had enough feel of that area to really know. Your foreign cars are 375,000 or 385,000. I have no feel whatever of what those might be next year because sometimes you can be going up awfully fast on a curve and then you come to the top of what they call a Gompers curve, and you don't know that you are there until you get there and look back.

Q. Have you made any decision as to what the small car would be like if you produced a small car?

MR. DONNER: That would be answering a lot more than your question if I tried to answer it. I don't think you would really want me to answer a question like that.

Q. Would you say how many General Motors-built foreign cars were brought into the U. S. in 1958?

MR. DONNER: I think it is around 30,000—in the thirties I know.

Q. Historically, the smallest car in any family of cars is outselling by far the greatest volume in any family car. Do you think that this would still apply if you were to bring out a smaller car?

MR. DONNER: You say the "smallest cars"—it depends on how broad you make that. In the Chevrolet line, just to state an experience, the car with the lowest volume in the last year or two has been the lowest-priced series. Therefore, it makes me a little hesitant. . . .

Let me put it this way. We have always thought in the past of the car demand being in the form of a pyramid; whereas, when you go down in price the pyramid widens out. The reason I cited the Chevrolet experience is that the small car, as everyone is talking about it, may be just a part of that lower pyramid; just as the low-priced Chevrolet series is just a part of the pyramid. If it is just a part of the pyramid, it might not be the largest selling car. It depends on what the public's reaction to it is and the breadth of its use. I would not want to forecast whether it would or not.

Q. Does this mean then that you are saying that if you should bring out a new car that it would not be any smaller than a low-priced Chevrolet?

MR. DONNER: I didn't say that. It is amazing what you can read into what I said.

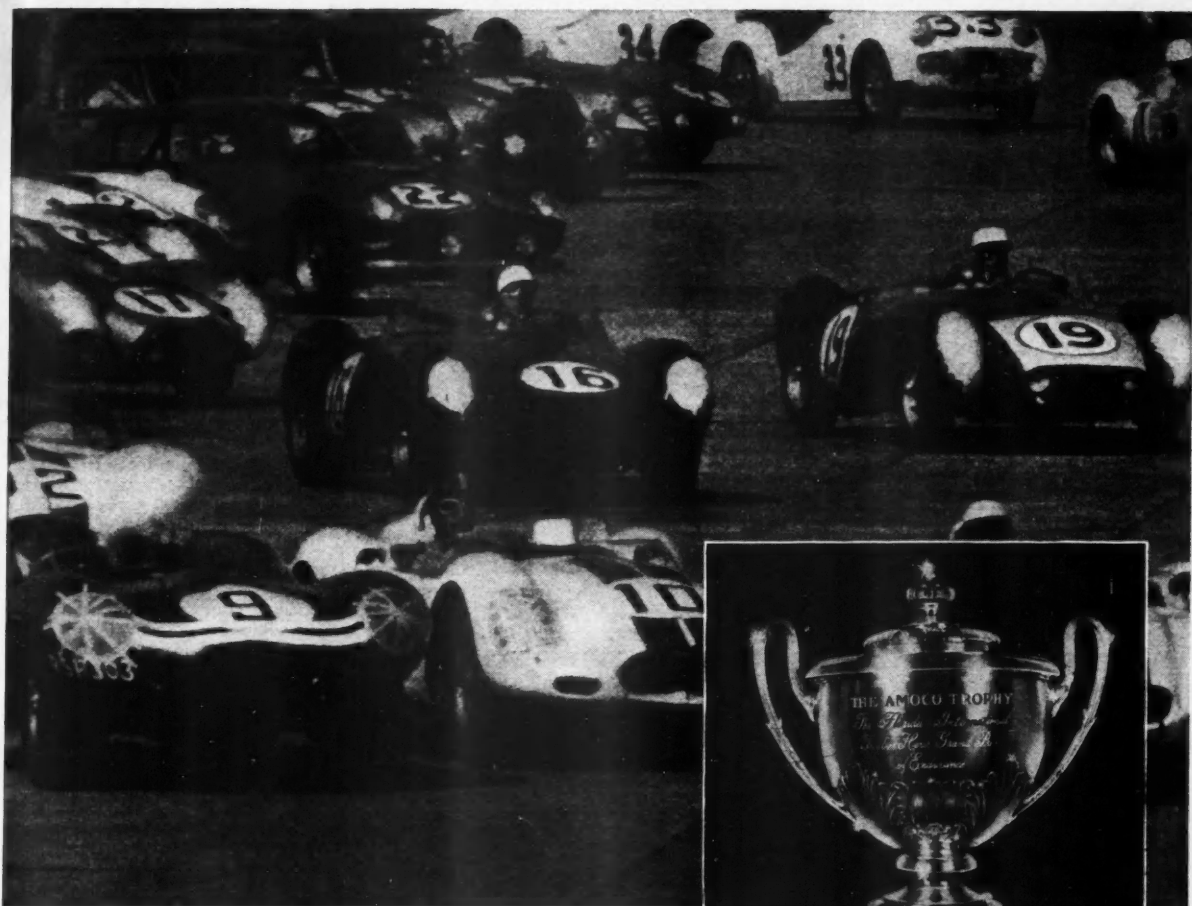
Q. But I am trying to ask a question—you apparently think this should be considered in the same market group as your cars?

MR. DONNER: That is where you are reading in. I was just picking up a statement you said to illustrate that a smaller car might not be the largest selling car, because we have had this experience with one series in Chevrolet. I wasn't talking about what the small car might be. **Q.** But this one series is not a size thing at all—it is just a price leader.

MR. GORDON: I think there is another concept there too. This pyramid actually goes down into the used car market in which the volume annually is roughly twice what it is in the new car market. There is a lot in the base of the pyramid that is not contingent, let's say, upon the present low end of standard car line price.

Q. Then I gather that you are not going to make any statement as to whether or not you think a small American car, if you brought it out, will sell more than Chevrolets?

MR. DONNER: I couldn't honestly answer you because I don't think that any of us know the answer. We find different answers right in our own shop. It is a matter, in my opinion, of great speculation and every crystal ball gazer does his own assuming. The trouble with assumptions is that you seldom know how many fallacies you wrap up in an assumption ahead of time.



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the race unleaded Amoco-Gas will protect their car's engine from power-robbing lead deposits.

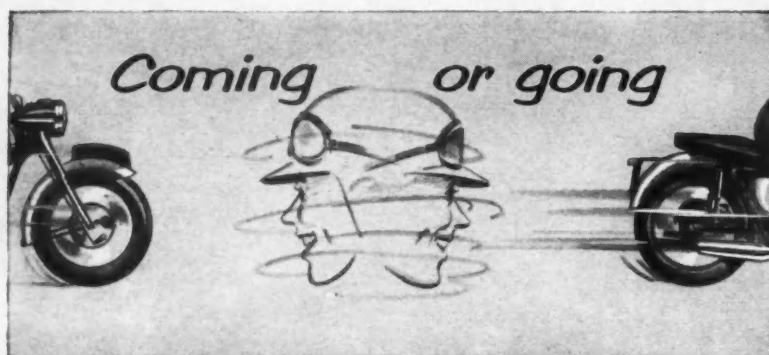
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MOTOR TREND/APRIL 1959 69



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PRIZES!
PRIZES!**

"project ideas"

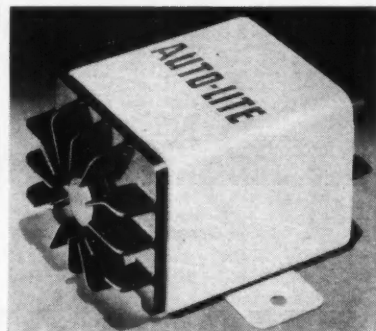
**MT'S BIG
CAR-DESIGNING
CONTEST
SEE P. 44!**

TRANSISTOR

What will this new Auto-Lite development mean to you . . . ?

SWITCHING LARGE CURRENTS in automotive ignition systems has plagued the designers of internal combustion engines for years. As engine speeds and compression ratios increased, the coil output requirements also increased to where the large amounts of current that the points were now handling shortened their life and reduced their efficiency after only a few hours of use.

During the mid-1950s a semi-conducting crystalline solid known as Germanium and called the transistor was developed and has been widely used in the electronic field. Transistors are like an electronic valve, i.e., if they are energized by a small amount of



Auto-Lite transistor unit replaces stock coil.

current they become very conductive to large amounts of current. It is almost like a pane of glass that we would make opaque or transparent by applying low current to it, rather than having to pull a shade up and down to accomplish the same thing.

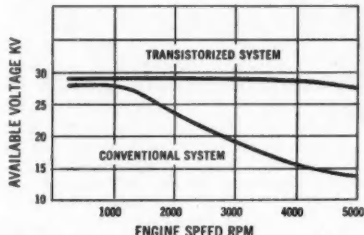
Auto-Lite engineers began to experiment with transistors for high-current switching adaptable to ignition systems. By using the ignition points to energize the transistor, life of the points was increased as they now carried just a small fraction of the current they were formerly required to handle. This eliminated the need for a condenser as there was no longer enough current to cause arcing.

It sounds very simple, but by solving these problems the engineers inherited a whole new set. Transistors are very sensitive to temperatures in the range usually found in engine compartments. During continuous switching cycles, the transistors themselves dissipate energy in the form of heat that is sufficient to severely damage the device. A lot of brainwork went into providing a method safely conducting outside heat and developed heat away from the unit, leaving only one big step to overcome.

OR

IGNITION

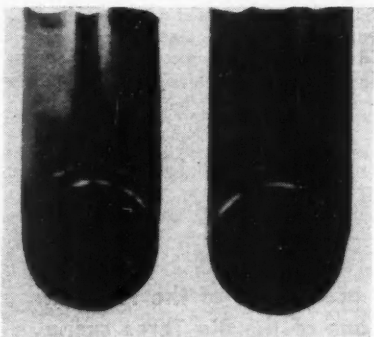
Germanium metal is also very sensitive to back voltage. The current passed by the transistor into the primary circuit is in the neighborhood of 350 volts. This voltage is so damaging to a transistor that ordinary ignition coils are incompatible with this type of circuit. An entirely new coil that would permit the use of transistors, and a special circuit to reduce back voltage by 8 to 1, resulted in a system that gives a constant output throughout the speed range without dual points. Of course, the research and development just



Development of new coil and circuit gives uniform voltage without two sets of points.

described, that one can read in a few minutes, took the Auto-Lite engineers several years to accomplish.

Fleet operation and individual tests proved that the new transistorized ignition system will give well over 100,000 miles of trouble-free service without point replacement and still deliver the same full speed range output as the day it was installed. Auto-Lite also claims that this system will deliver energy at high speeds equivalent to conventional magneto systems. Owners of outboard motors and other similar engines might now be able to



Non-transistor ignition point (left) is badly pitted, while transistor point is smooth.

take advantage of coil ignition systems that provide easy starting and smooth low-speed operation.

The unit can be installed in a few minutes on any engine having a conventional coil ignition. It is currently available to emergency vehicles and fleet operators. Present cost is near that of power steering options but as original equipment it will compete eventually with conventional systems. If production tooling continues as planned, transistorized ignition should be optionally available on 1961 cars. This breakthrough in ignition development could well be the start of a wireless, pointless, electronically-timed system that would last indefinitely.



Car control is the surest protection against driving dangers, irritations and expense. The Traction-Master Co. specializes in the manufacture and distribution of products designed and engineered to give you better control of all the horsepower under your hood!

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List
per shock
absorber

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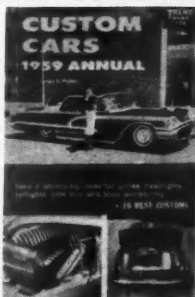
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1959
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ANNUAL

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Write Mr. Thor, 5353 W. Third Street, Los Angeles, Calif.

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America's FIRST Production Aluminum Boats

Guaranteed for LIFE
(Against hull puncture
in normal use in water)



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WHAT'S YOUR QUESTION? CHECK WITH CHUCK

Conducted by CHARLES NERPEL Technical Editor

"Whatever happened to the automobile turbine engine that was 'just around the corner'?"

ENGINEERING AN ENGINE OF THIS TYPE falls into two major projects: First, an engine that meets all of the requirements for such a portable powerplant, i.e., size, weight, fuel economy, noise level, and adaptability. Second, and probably the more important, is the cost engineering. An engine, or whatever is being developed for civilian use, must be built to extract a profit for the builder at a cost the consumer can afford.

Unlike military contracts, where cost is of little consequence, the materials for civilian goods must be readily available and have a reasonable cost. Progress along these lines has been more rapid in the last two years than in the previous five years in the automotive turbine engine field. Chrysler Corp. made quite a splash several years ago by driving a turbine-engined car cross-country. This was the first phase, an engine that meets the requirements. Since that time they have been quietly working to produce metals from existing plentiful cheap ores to replace the expensive and comparatively rare metals in the experimental engine.

Turbine engines in use by the military, both in planes and on the ground driving compressors and pumps, are seldom cheap, but most important, the men who operate them are highly trained in their use. The modern automobile engine, whether it be turbine or reciprocating piston, requires practically no training to operate. Driver training today is concerned chiefly with teaching how to steer, stop and signal.

Chrysler's turbine engine, now undergoing cost engineering, has been able to meet and surpass most of the advantages of a piston engine. Weight has been reduced to almost half that of a piston engine of equal horsepower, and fuel consumption has been improved to a point where it is better than reciprocating engines and has less exhaust waste because of reburners that consume about 80 per cent of the fuel.

Anything that will go through a pipe, mix with air and burn can be used as a fuel. At the present time there are such fuels that are quite cheap but are not likely to remain so if their highway use increases and they become subject to the same taxes as other automotive fuels. If it were possible to use alcohol-petroleum mixtures, our surplus grain problem would be solved in short order. It will take another two years before turbine engines are fully developed for automotive use, but at that time the motorists will probably have them as engine options.

"In view of the lack of public acceptance of the Franklin air-cooled automobile, why is one of the Big Three going to use this cooling system in their rumored small car?"

AT THE RISK OF BRINGING DOWN THE WRATH of former Franklin owners, this car failed because the cooling system was just plain inadequate. The late models were vastly improved, but by that time the public had made up its mind against air cooling. Great credit should go to the designers, however, as their thinking was far beyond the know-how of the times.

Modern alloys and manufacturing methods have made air cooling as efficient as liquid cooling, and in some applications, even better. Elimination of water jackets and radiators reduces cost, weight and maintenance, and enables the use of ducted air from a low-power-consuming squirrel-cage blower instead of a heavy blade-type fan.

With demands for more and more interior space, every inch that can be gained by reducing size or necessity of components increases available usable room without increasing overhang or wheelbase. Flat opposed engines have proven their worth for rear-engine installations and lend themselves to air cooling much better than in-line engines where a lot of baffling is necessary to steer air equally to all the cylinders in a comparatively long line.

MAKE



SAVE

A NEW SERVICE FOR YOU

Questions and Answers

What is it—Best Car Buys is a listing service . . . a publication which is sent you every six weeks. It is an organized effort to bring to you from hundreds of sources throughout the United States a list of new and used cars that you may purchase at dealers wholesale or below . . . it is an organized effort to screen from thousands of current wholesale buys the very best ones and present them to you in published form, describing the car . . . the equipment . . . the price . . . the address of the seller and complete instructions for buying wholesale.

But how can I buy wholesale . . . I am not a dealer! True, many of these cars can be bought only through a licensed dealer so we have arranged for a licensed dealer to buy them for you. You will be given a registered number and card which will be submitted each time you wish to make a purchase . . . it's as simple as that.

What type of cars will I be able to buy wholesale! Practically every make and model . . . NEW and USED . . . American and Foreign . . . New cars ordered to your specifications . . . Used cars from the 1950 models through the 1958's . . . sedans, hardtops, wagons, convertibles, trucks, even cars from overseas . . . direct to you.

Where do these cars come from! The giant auto wholesalers who sell large volumes of cars to the used car dealers . . . private company fleets who sell every one or two years . . . distressed new and used car dealers who must reduce inventory . . . car leasing agencies . . . car rental agencies who may sell a car after four months of use but usually after ten to twelve months. Federal, State, County and City agencies who dispose of cars by bid . . . fleet brokers.

What is wrong with these cars . . . they are so cheap! What at first may seem like a gimmick can be explained if you understand the sound business principle behind these prices. First of all, remember these are not retail prices, in fact many are below the average wholesale and are exceptional buys for the car dealer as well as for you. These cars are normally sold only to the car dealer for resale on his lot and if you didn't know how and where to buy direct you might end up buying one of these same cars from his lot and be paying him a profit instead of making one for yourself. The fact that you can buy some of these cars below their actual wholesale value is not because they are wrecked or damaged but because they are usually fleet cars and are sold under a different system than the buying and selling of single units.

As an example let us examine a typical situation where the fleet user is an insurance company who buys 300 cars each year. To begin with they buy from the dealer who gives them the lowest bid . . . these prices are usually \$25.00 to \$50.00 over the dealers wholesale. After the company has purchased these cars they set up a tax depreciation on each car which will allow them to sell this car at the end of one or two years for a very small sum compared to its current market value yet justify this loss or depreciation from a tax standpoint . . . this is the first explanation. When the company is ready to buy another fleet the dealer who sells the new cars is rarely in a financial position or willing to take 300 used cars in trade on a gross profit of \$25.00 a car. Therefore, the insurance company must dispose of their own cars and this is usually done through the giant middleman or fleet broker who will bid and buy the entire fleet. Since his success is dependent on buying and selling as fast as possible . . . so that he can release his working capital for future bids . . . he sells price . . . for he knows that this is the only way he can unload these cars fast enough . . . his outlook on the car market is how much can he make on his investment in how short a time . . . not what the market potential is for a single car. His formula is simple . . . he divides the total number of cars into total price he pays the insurance company and adds a profit suitable for his risk investment and this is the price all 300 cars will be sold for . . . a very democratic action since among these three hundred cars some may be driven 9000 miles while others may be driven 40,000. You see it will be possible for you to benefit tremendously from this system.

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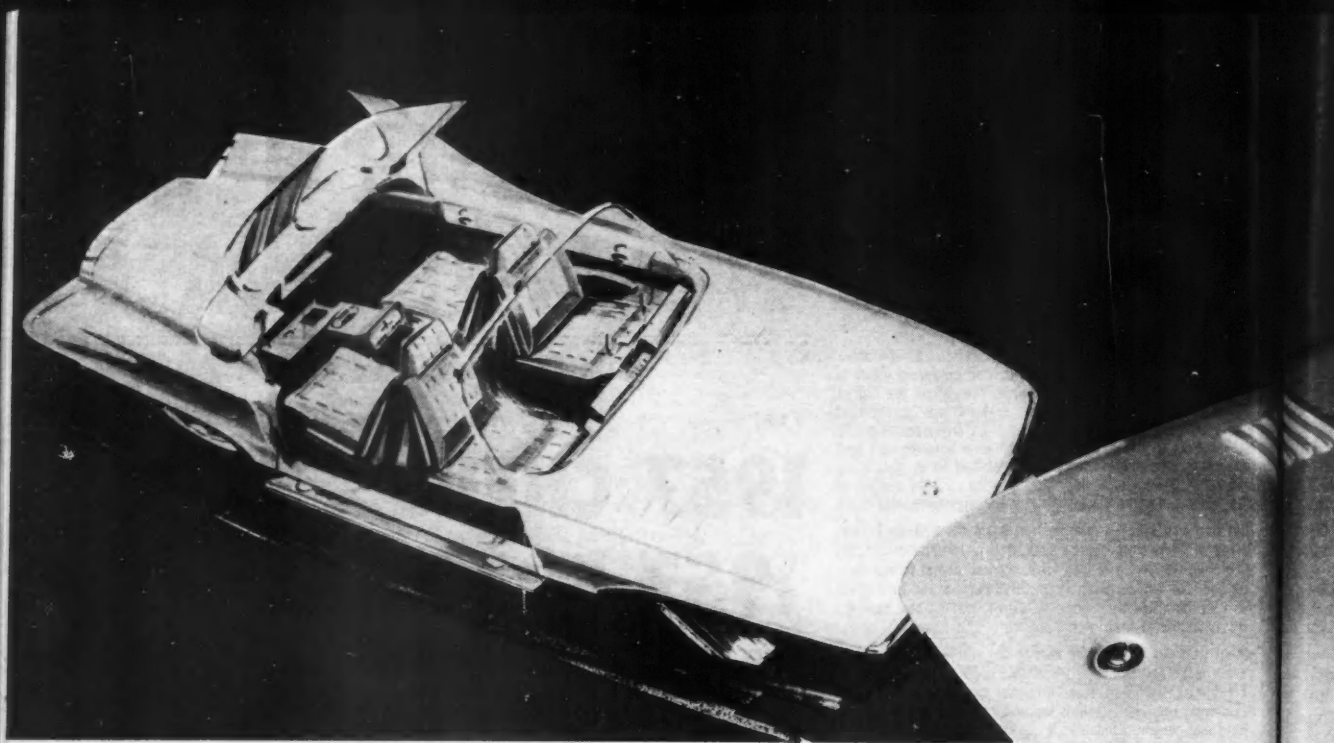
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Suddenly It's

WILL FUTURE CARS BE POWERED BY ELECTRICITY? POSSIBLY,

CARS THAT RUN ON ELECTRICITY? It's not a wild dream, but probably a long way in the future. But then again . . . ?

When we saw the sketches and $\frac{1}{4}$ -scale model you see on these pages, we went to A. E. Kimberly, DeSoto's Chief Engineer and director of the product. We asked him if this car was a stylist's dream or if it had a practical application. Here's what he had to say:

"The DeSoto Cella 1 is strictly an idea car. The ideas, however, have not been pulled out of thin air. When we speak of a revolutionary electro-chemical system, we're referring to something that has been *proved*. Lockheed Aircraft has already developed practical applications of this principle, though not on a scale needed to power a car.

"We call the propulsion idea a radical departure from previously explored engineering concepts such as gas turbines, free piston and solar energy engines or advanced reciprocating engines. Hydrogen and oxygen gases would be fed into a cell, with the resulting chemical inter-action being converted directly into electrical energy. It's similar in principle to the operation of a present-

day dry-charge battery. This energy would then drive four high-speed, lightweight motors at each wheel.

"Naturally, there is much research and development still needed, placing such an idea well into the future. In addition to developing the power source, there is still the problem of designing and building lighter electric motors to transmit this power into usable torque. Present-day electric motors that develop enough torque, and which would provide performance comparable to today's standards, would be entirely too heavy.

"These lightweight, high-g geared motors would be positioned next to the wheels. Here they would drive through short universal-jointed shafts to independently-sprung wheels. If ultimate weight reductions are realized, it may even be possible to consider mounting the motors directly to the wheels.

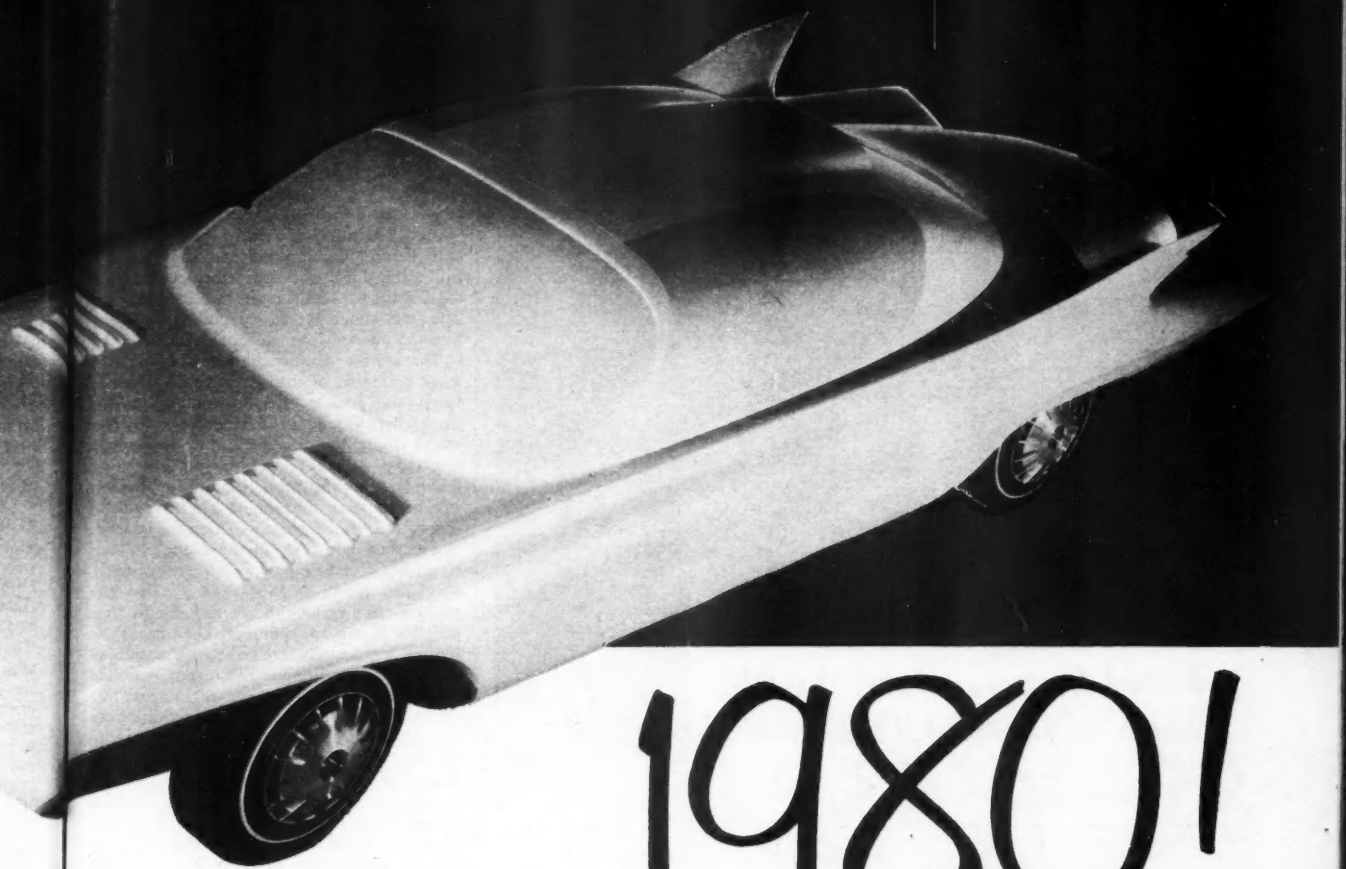
"Motors would be arranged in pairs, with appropriate controls for operation either in series or parallel, thus utilizing their optimum characteristics for acceleration or high speed, as required. The inherent high torque or propelling force of this type of drive

would provide good low speed performance."

As to what other engineers think of the possibilities of the electro-chemical power source, or for that matter an early return of electric cars in any form, we went to George Huebner—the man responsible for the development of the Chrysler gas turbine.

Huebner points out that in order to provide torque comparable to that of today's gas engine, the electric car would have to carry about 2000 pounds of lead-acid batteries. Of course, new lightweight batteries would reduce this overall poundage significantly, but the problem of weight still remains in another location: the electric motors. Huebner pointed out that an electric motor capable of providing the right amount of torque at the wheels would far outweigh the engine and transmission of the present automobile.

As to whether or not a small atomic powerplant—like the one developed by the Martin and Minneapolis-Honeywell Cos. and given national publicity by President Eisenhower—would work, Huebner said this: "The principle might be employed. So far, however, the idea is in an embryonic stage."



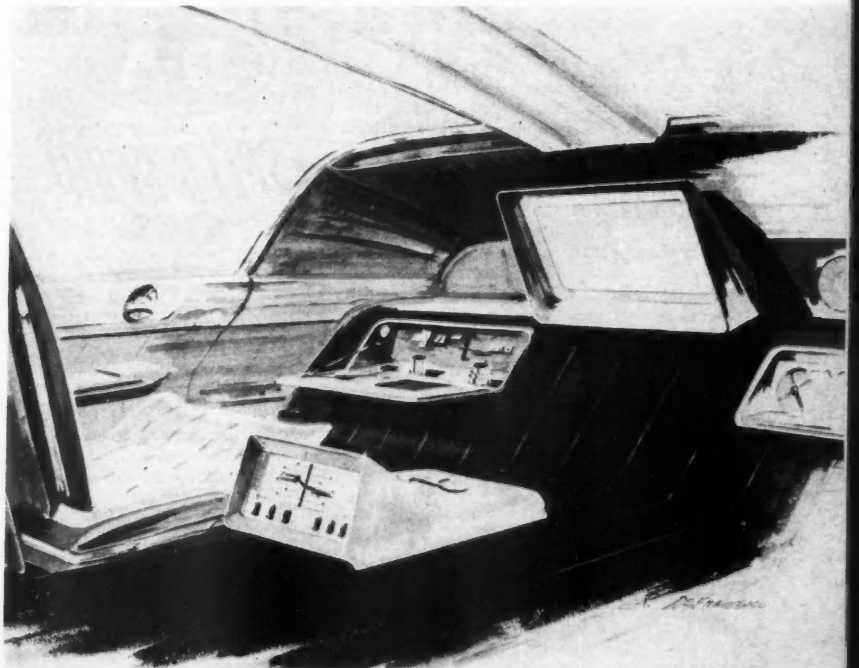
1980!

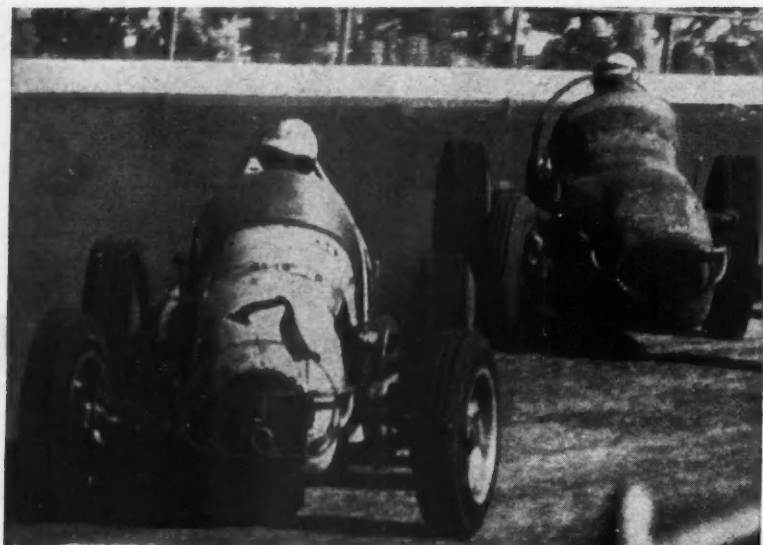
SAYS DE SOTO

On the basis of the present device, Huebner feels that a car using it would be caught up in the vicious circle of not having the space to house a powerplant large enough to drive it: The larger the powerplant, the more space required; the bigger the vehicle, the larger the powerplant. . . . Nevertheless, Huebner agrees, once a principle has been proved, as it has in this case, it is possible that sometime in the future a more efficient means of making it work may be found. So, don't give up on an electric car yet. Great things are on the automotive horizon.

As to other ideas in the Cella I, it would have integral aluminum wheels and brake drums, a canopy-type roof that would raise to allow easier entrance, a periscopic rear view mirror, a heavily padded instrument panel that would telescope in event of impact, a safety panel completely encircling the passenger compartment, form-fitting seats that swivel in front and face rearward in the rear, heating elements in all glass to eliminate fogging, a refrigeration compartment in the rear, a television set, and what else would you like to take your mind off driving?

—Bill Callahan, Detroit Editor





**The best race car in the
United States . . . and the OIL
which helps make it the best**

The D-A LUBRICANT SPECIAL, with Johnny Thomson at the wheel, was the most successful race car in the country in 1958. Scoring 1,520 points in National Championship competition, the D-A Lubricant Special led the next car by 240 points (despite not having been entered in the Indianapolis "500," where a total of 5,050 points are offered).

One reason for the success of the D-A car was an amazing record of 10 finishes in 13 starts, including 4 firsts, 3 seconds, 2 thirds and 1 fourth place.

Hard-charging Johnny Thomson says, "There's no such thing as a rev limit in Championship racing. To finish well, you have to run flat out . . . all the way." With D-A SPEED-SPORT OIL in the crankcase, Thomson has been able to punish his car in race after race . . . with no mechanical trouble caused by lubrication failure.

Developed and proved in years of automobile racing, D-A SPEED-SPORT OIL is designed to give maximum protection to any automobile which is driven hard—sports car, foreign car, hot rod or racing machine. Now, for the first time, it is available to the public.

Also Available: D-A SPEED-SPORT GEAR LUBE, the only gear lubricant on the market designed specifically for competition.



Dealer and Distributor Inquiries Invited

Write to: Mr. Roy Sherman, Racing Division,
D-A Lubricant Company, Inc., Dept. BE,
1331 W. 29th Street, Indianapolis 23, Indiana

Racing Division

D-A LUBRICANT COMPANY, INC.
Indianapolis 23, Indiana

Mr. Eliminator

continued from page 34

seat I watched the tachometer needle climb in spurts as we accelerated down the rough course. The time- and race-tested chassis of Ole Blue guided itself through the clocks at the end of the quarter. I shut off and brought the car to a quick stop, turning out long before reaching the end of the strip. Bill came down with the truck and results of the run: 140.39 mph in 10.2 seconds. That was about par so we pushed her back into the pits and brought out the orange car.

That's when our troubles began. We had made a number of changes in timing, blower speed and fuel nozzles to compensate for the higher altitude at Oklahoma City. Somewhere along the line we must have made a mistake. Run after run was made without getting up to 130 mph and during the last run of the day the engine ran so badly I had to shut it off before finishing the quarter. We pushed both cars to the night pits and went to work. Frankly, we were worried. Ten cars during the day had bettered the elapsed time of Ole Blue, and the orange car was not even running. The crankshaft for the large engine arrived so we assembled that engine but decided not to put it in the car until we made the small engine run. We "retuned" the car by putting everything back just as it was the last time it had been run in California. The engine sounded healthy so we put the orange car to bed.

Ole Blue was fired up and she gave off with her usual sounds of dependability and power. However, when I killed the engine we noticed a trace of white smoke from the front breather, a sign of pressure in the valve chamber. That meant a loss of cylinder pressure somewhere. We didn't bother to tear the engine down for we had brought no spare parts for it other than a set of bearings. When we went to bed about 3 A.M. our spirits had been dampened a bit.

Saturday morning, the second and last day of single qualifying runs, found us sleepily preparing both cars in the pits. The engines were warmed and the cars put in line. Ole Blue carried me through the traps at 141 mph in 10.15 seconds, but smoke was pouring rather steadily from both breathers. We decided to devote all our attention to the orange car. It looked like Ole Blue was through.

The engine in the orange car ran very well and we made a number of runs in less than 10 seconds.

That night, after the strip had been closed, we pushed both cars to the night pits and sat down for a conference. Ole Blue appeared to be definitely out of the running and the orange car, while it seemed to be running very well, was still far from showing an advantage over the competition. In fact, 26 class A dragsters were qualified for eliminations to be run the following day, Sunday. If any improvements were to be made they would have to be executed right then.

We decided that in order for the orange car to have an edge on the competition it would need more horsepower. Our 450-inch engine was assembled and ready. However, it was a brand-new engine, as yet untried. By gambling that it would produce more

power than the one in the car we could send what chances we had up in smoke. Once installed, there would be no time to change back before final eliminations in the afternoon. We decided to gamble and also to rear down Ole Blue's engine to check its bearings. She was still qualified and though her chances of winning seemed small, she would help to wear down the competition.

We pulled the 392-inch engine from the orange car, installed the 450-inch engine and fired it up. The new engine sounded healthier than its smaller cousin and for the first time we began to smile. We checked the lower end of Ole Blue's engine over carefully. The bearings were in good shape but after reassembly we found that two cylinders were low on compression. We pulled the heads and checked the valves. All were well seated so we figured the trouble had to be either in broken rings or cracked pistons. The engine could blow up at any time, either on the starting line, during a race, or even while just warming it up. Anyway, we fired it up. It sounded good but lacked the throttle response that it had always seemed to have in the past.

A few hours' sleep and we were back on the strip at 7 A.M. The course was to be open for a while for single runs before eliminations began and I wanted to see how the new engine was going to run. We warmed up the engine and pushed the orange car up to the line. Some of our competitors were jeering us for changing engines in the middle of the stream but I imagine their expressions changed a bit after that first run with the new engine. I felt the additional horsepower dig into the pavement as the car pulled away from the starting line. In fact, I had to ease up on the throttle for too much white smoke was pouring off the rear tires. As soon as the tires got a good bite I hit full throttle. The orange car went so straight it felt like it was on rails. I didn't touch the wheel until I was through the traps and slowing down. Bill came down with the truck and the good news. I had hit 151 mph in 9.62 seconds.

We pushed the car back to the pits and parked it beside Ole Blue. We were ready for class eliminations. With 26 cars qualified it meant 13 separate races in the first round. The cards were drawn and we found that Ole Blue had drawn Joe Dillon, of Phoenix, Ariz., as opponent and the orange car had drawn the "Mean Texan."

My first race was in Ole Blue. When we fired the engine and pulled up across from Joe Dillon in his 465-cubic-inch Olds-powered machine I only hoped Blue's engine would hold together long enough for the run. The starter was a bit slow, as though he were trying to heighten the drama of each race, and Dillon and I both almost jumped the flag. However, we got away to a good start. Ole Blue pulled heartily out of the chute and the shift into second saw me about five feet ahead. We ran the rest of the quarter-mile without changing position and Ole Blue won with a top speed of 139.60 mph in 10.19 seconds.

Then it was time for the orange car to go against the Mean Texan. I never found out who was actually driving that machine but his unmerciful revving of the engine on the starting line probably cost him the race. When the flag went up I pulled easily off the line and his engine blew up as he popped

continued on page 79

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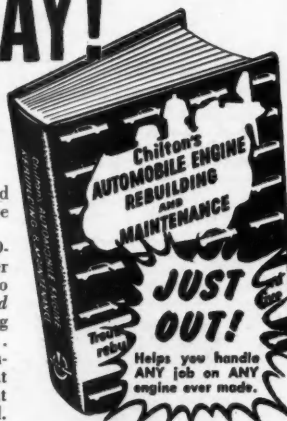
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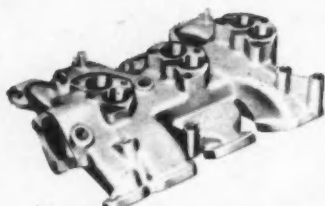
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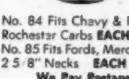


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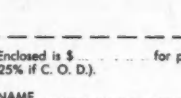
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the clutch. On this run we hit 150.50 mph.

While the next round of eliminations was being completed we drained the water from both cars, refilled the engines with cold water and pushed the cars into line. Then we were notified that only four cars remained in class A dragster competition. Ole Blue was still in there and so was the orange car. Art Chrisman and Jay Cheatham were the other two. The drawing was called and we found that the orange car was pitted against Cheatham and "Ole Blue" was to run against Chrisman.

At this point I almost withdrew Ole Blue from competition for I was sure she had no chance against the two veterans. Perhaps by concentrating all our efforts on the orange car we might have a better chance of beating both Cheatham and Chrisman. My partner reasoned that with two cars we had twice as much chance of winning. Even though Ole Blue might not win she would still force Chrisman to make another fast run. His best time at that point was around 145 mph in about 10 seconds flat. It was then that I remembered the "panic gear"—the 4.11:1 rear end ratio we used for races where we needed to pick up a few thousandths of a second on elapsed time. However, we had never used this gear unless the engine was in excellent shape and on a smooth course. Its use meant that the engine and chassis would be strained beyond all known limits; it was only through luck that such a run was completed without loss of at least a set of bearings. So we installed the panic gears in Ole Blue and led her forth to the slaughter. But first I had to run with the orange car against Cheatham.

Fairly confident of victory, I started the engine and rolled up to the line. Cheatham was parked there with engine running. I nodded toward him and then watched the starter. The starter rested the tip of his flag on the ground and with his other hand pointed at me, then at Cheatham. I was ready and nodded. My eyes were glued to the tip of that starting flag but it didn't move. My throttle foot went in a little deeper and I felt the engine speed build up. Still the flag didn't budge. I glanced quickly upward and saw the starter pointing toward me again. Why, I didn't know.

I glanced toward Cheatham. He too was waiting. I nodded again at the starter and once more focused on the tip of that flag. Inadvertently I applied a bit more pressure on the throttle and heard the engine begin to scream. But there was no time to back off; that flag could move at any split second. I had the feeling the starter was playing with us. I knew my engine was getting warm and could almost feel Cheatham cursing in his own cramped cockpit.

This fleeting thought probably cost me the race, for before it had cleared my mind the flag flew into the air and my clutch foot came off too fast. Clouds of white smoke poured off the rear tires and the chassis crossed up on the starting line. The front end of the car aimed straight at the starter. It was as though the machine itself knew the reason for its embarrassing position and was seeking revenge. I eased off the throttle but the rear wheels continued to spin. Just when it appeared I could not continue without hitting the starter I shut off and the car

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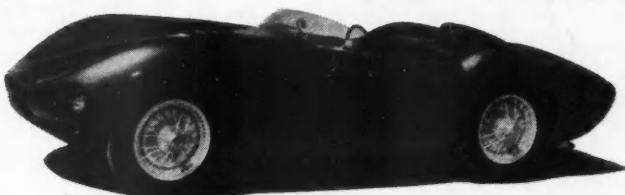
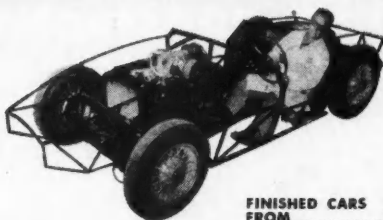
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spun around. Cheatham went on to win. Thus was the orange car eliminated.

All our hopes were ground into the surface of the asphalt strip. And having lost there was nothing I could say to the starter without being a poor sport. So I bit my tongue, climbed into Ole Blue and rolled up to the line to race Chrisman.

We fired the engine and smoke immediately began pouring from both breathers. Mentally I kicked myself for installing the panic gears. In her sick condition I felt Ole Blue didn't have a ghost of a chance. However, when the starter pointed at me I nodded, revved the engine to starting speed and watched the flag. It budged and I popped the clutch. Once more Ole Blue shot off the line but with the panic gears the engine screamed past 7000 rpm before we had gone 100 feet. I shifted into high and held on. I forgot to look for Chrisman but he was not in front of me so I drove on, waiting for the engine to blow up. In 10.04 seconds I crossed the line less than half a length ahead of Chrisman and no one was more surprised than I. Once more Ole Blue had held together and won. But what had she won? Only the right to go against Cheatham whose engine was running beautifully and whose driving ability left little to be desired.

We took Ole Blue back to the starting line. While we drained the engine and refilled with cold water I watched Jay Cheatham. His smile was gone and I wondered why. Then it dawned on me. Many times on the West Coast he had been beaten by Ole Blue and I think Ole Blue had him beaten again, psychologically anyway.

We fired the engine and I pulled up to the line. Once again the starter waited a long time after receiving our nods and I finally jumped the flag. I shot off the line but quickly closed the throttle and turned around, coasting back to the starting line. Cheatham had not moved. He then shut off his engine, pushed his car back and began draining water. We did the same. After being held on the starting line for so long both engines were too hot for a good run. We refilled with cold water and returned to the line. Cheatham pulled up alongside.

We gave our respective nods of "readiness" to the starter and then I watched the flag. It went into the air and Ole Blue shot off the line. This time Cheatham had his foot too far in the throttle and he made a ragged start, with smoke pouring from his rear tires. Seeing this I gave Ole Blue a break by shifting into high at 6000 rpm and away we went. Halfway down the strip I looked back and saw Cheatham about three lengths away, coming fast. If the engine didn't blow Ole Blue could still win. I prayed for her. "Ole Blue, honey," I begged, "just this once, hold together, beat Cheatham, and I'll give you a nice new engine." Her only answer was a big puff of white smoke but she never dropped a beat. We sailed across the line ahead of Cheatham and won Class A eliminations—the toughest class at the Nationals.

Ole Blue had done it again. When we stopped at the end of the course I was so proud of her I couldn't speak. I just sat in the cockpit and waited for Bill.

Bill was proud of her too but he brought bad news. She had to make two more runs against other class winners for the title of

continued on page 82

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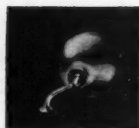
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Top Eliminator and Champion of the meet. "But that's tomorrow," I exclaimed. "I thought we'd change engines tonight."

Bill just shook his head. He had been told by the officials that even though it was late and getting dark, the top eliminator runs had to be made that day. It was 6:35 P.M.

By 6:40 we were back on the line with fresh water and ready to run. Three other cars were involved in that final round. LeRoy Mackey of Corpus Christi, Texas, in a Chrysler-powered Bantam-bodied competition coupe/sedan with an E.T. of 10.28 seconds, was top eliminator in his class. Albert Isenbaugh of Phoenix, Ariz., was class B dragster winner over 23 cars in his class and Dode Martin in the Chevrolet-powered Masters Dragliner was Class C eliminator.

The first race was between Mackey and Isenbaugh and the latter won with an E.T. of 10.51 seconds. It was then Ole Blue's time to race the Masters Dragliner whose E.T. records showed consistent running at around 11 seconds. I decided to give Ole Blue a breather by just staying ahead of the smaller-engined car and we won that race in 11.12 seconds. The sky was getting very dark.

After crossing the line ahead of the Dragliner I brought Ole Blue to a stop, wheeled around and headed back to the starting line. Some 30,000 spectators were yelling encouragement as Ole Blue and I made the trip back. But I was worried. Isenbaugh had been getting through the quarter-mile only a few hundredths of a second slower than Ole Blue so this last run would have to be full tilt. As we coasted back to the line I begged of her again, "Come on, honey, just one more good run."

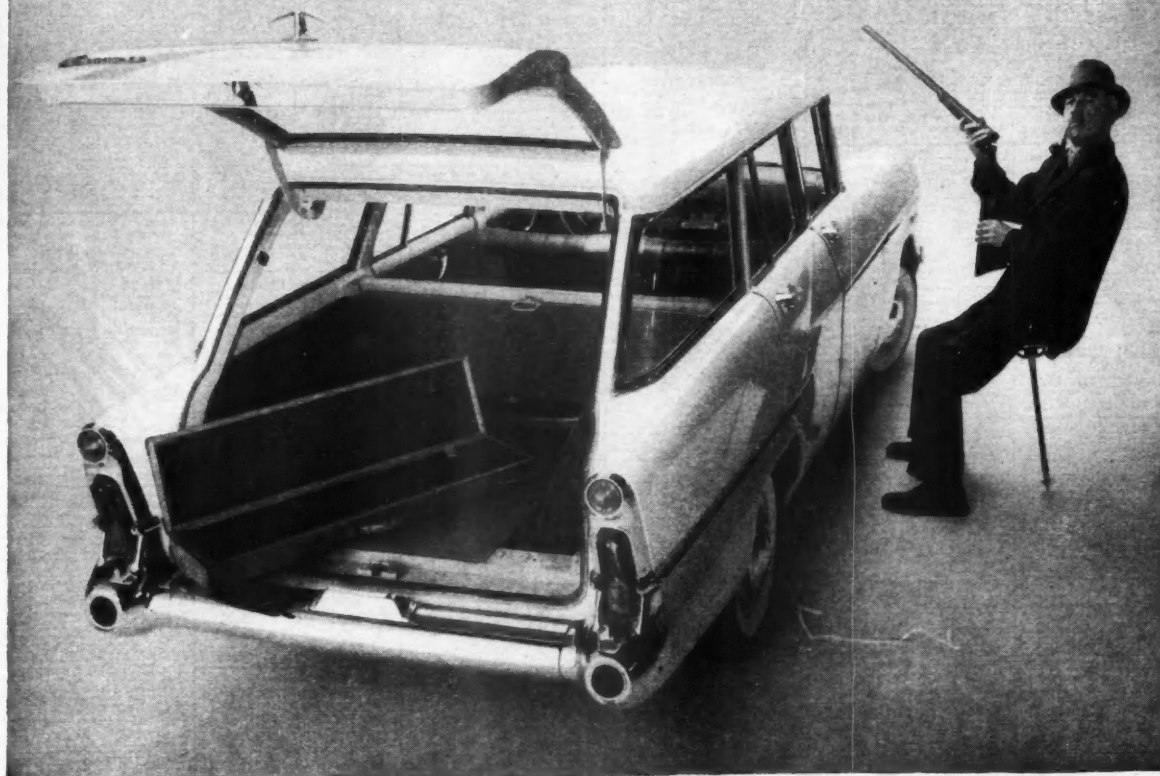
When we had drained the water, refilled, started the engine and pulled up opposite the waiting dragster it was 7 P.M. and quite dark. Once again the starter pointed. At the first sign of flag movement I popped the clutch and a cloud of smoke flew back from the engine as we shot away from the line. It was too dark to read the tachometer so when the engine felt like it was almost ready to fly apart I shifted into high. Somehow, miraculously, she held together. I couldn't see Isenbaugh so I just aimed between the timing trap lights and as we blasted through them I shut off the engine. We had beaten Isenbaugh for the title of "Mr. Eliminator."

We pushed Ole Blue back to the starting line to receive the awards. The huge trophy from the Champion Spark Plug Co. and the new Chevrolet pickup truck from Maremont Automotive Products were prizes worth fighting for but by then we were too fatigued for the full effect to register. By 9 P.M. we were back in our motel room and sound asleep.

Before falling asleep I thought of Ole Blue who rested in her night pits. Her labors completed, her engine was still cooling with two cylinder walls that had collapsed just before I had hit the switch at the end of the last run. I knew who the real champion was. When the chips were down and I had asked the impossible, she had come through. Her last three championship runs had all been at the same exact speed and elapsed time—140 mph in 10.04 seconds.

I made a mental note to detach the FOR SALE sign she had borne so gallantly through her three days of battling the nation's champions ... for I knew then that I could never part with her ... she had given me the greatest thrill of my racing career. /MY

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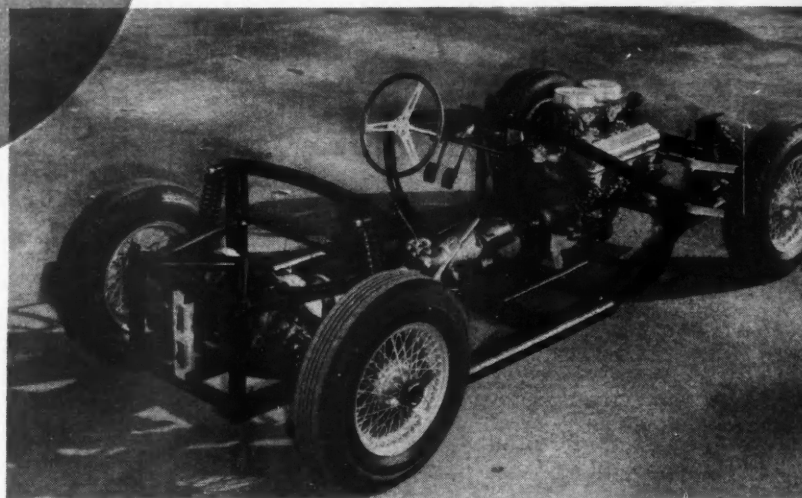
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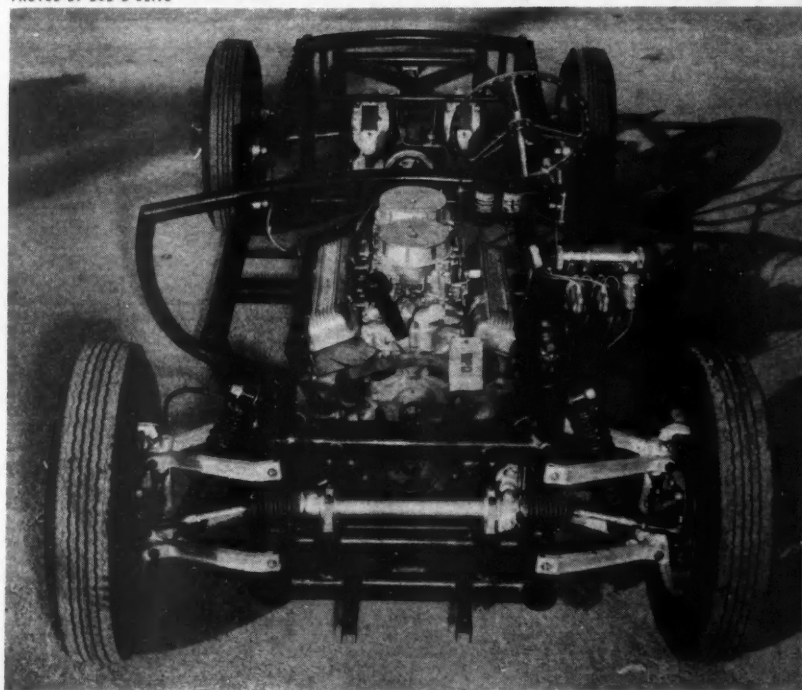
DEVIN'S Super Shillelagh

Rear suspension consists of parallel trailing arms, Salisbury differential unit, de Dion tube and coil springs with shocks.

Eleven-inch Girling discs are mounted inboard, actuated by individual master cylinder. Several options will be available, with choice of engines and gearboxes, carbs or F.I., and live axle.



PHOTOS BY BOB D'OLIVO



The 92-inch-wheelbase, large-diameter-tube SS chassis is manufactured at Devin's Belfast (Ireland) factory to accommodate Chevrolet's Corvette engine. It is constructed from readily available stock parts plus a number of specially fabricated ones. These include the forged A-frame front suspension arms, the cast aluminum wheel hubs and trailing links. Front view of chassis shows front suspension by equal A-frames, coil springs with shocks. Front brakes are 12-inch Girling competition discs, both front and rear have quick-change caliper pads. Steering is rack-and-pinion, with a comfortable 2½ turns lock-to-lock. Front tread, at 52 inches, is two inches wider than rear tread.

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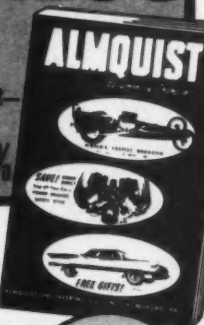
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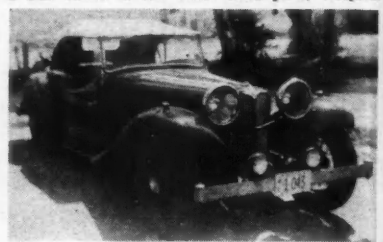
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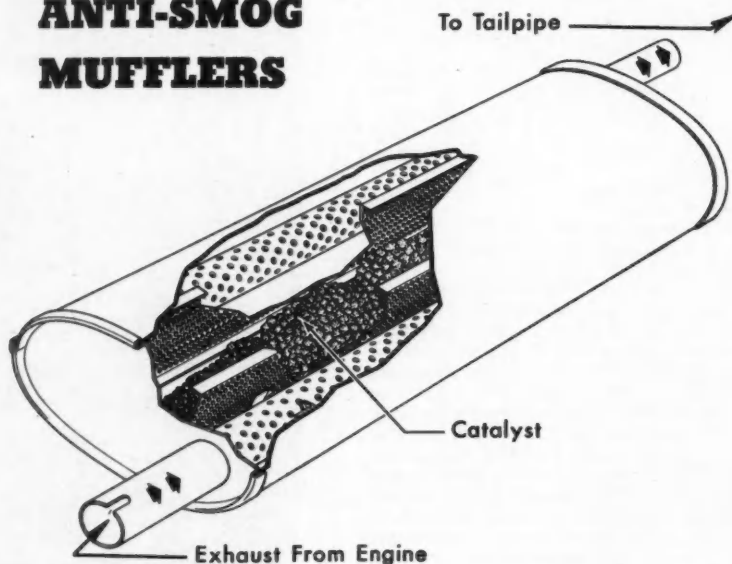
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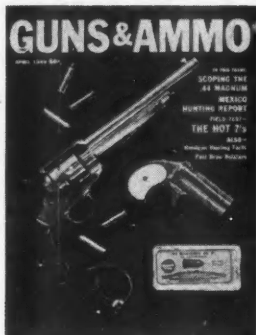
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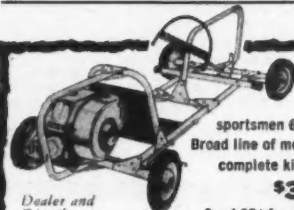
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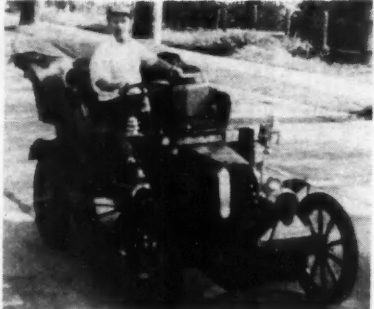
'59 GRAHAM-FRANCE conv., with body by Saoutchik—owned by French general. Body & tires good, interior fair, bows good, top needs replacing. Runs good. Chuck Cosgrove, 17315 Eddon St., Melvindale, Mich.

'32 LINCOLN KA 8-cyl. 5-pass. sed. Sidemounts, orig. 2-tone brown paint with black fenders. Immac. cond., inside & out. Featured Mar. '58 MT. \$650. Frank Weeks, 5860 Locksley Pl., Hollywood 28, Calif.

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'27 DODGE bus. sed. Showroom cond. thruout; 6400 orig. mi. 1 owner. \$500. Sol W. Koenigsberg, 27 Willowbrook St., Williammar, Conn.

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'32 ROLLS-ROYCE conv. Engine & body in good cond.; 17-20 mpg. \$2400 f.o.b. London, England. William G. Faustine, 1319 Ford Ave., Erie, Pa.

'32 AUBURN 12 custom phaeton. Beautiful cond.; restored in '53. Dual-ratio differential, etc. Will deliver; all letters answered. Ronald Brewington, Rt. 3, South Haven, Mich.

'27 ISOTTA-FRASCINI town car, with beautiful, very rare Saoutchik body, 1958 Grand Classic prize winner. Engine completely rebuilt, new top, uph., chrome; 6 new tires. \$3500. William A. Pelton, 7420 Charlene Dr., Dayton 32, Ohio.

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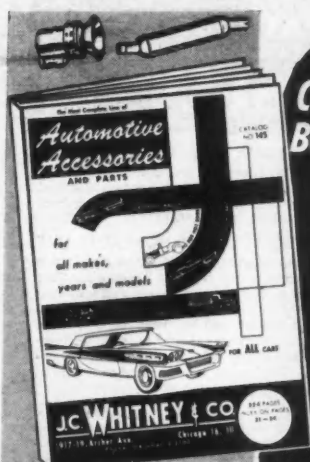
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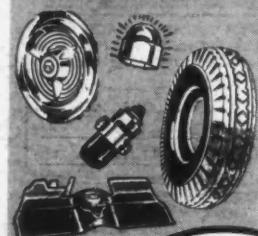


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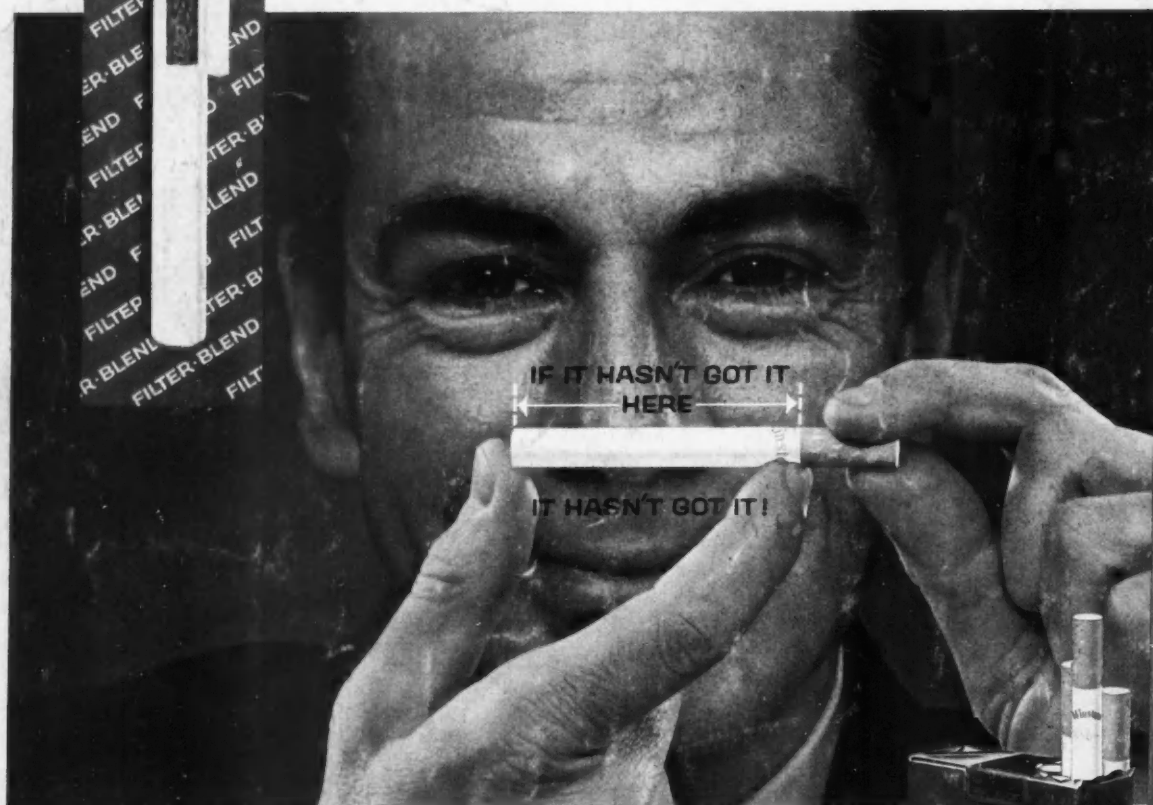
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